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ABSTRACT

This review of research literature from 1963 to 1972 discusses implications of research for analysis of communication behavior in work organizations. The review is organized into four sections: contributions from organizational theory; research related to the interpersonal milieu; research related to the organizational milieu; and an examination of methodology. The authors conclude that in all areas of organizational research, communication behavior is under-theorized and under-researched. They further state that communication research offers excellent opportunities for future contributions to knowledge about organizational behavior. An extensive reference list is included. (Author/RN)

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13. ABSTRACT

This paper contains a critical review of the communication literature published during the past ten years. The literature is reviewed for the implications for communication behavior in work organization settings, and is organized into the following sections: contributions from organization theory, research related to the interpersonal milieu, research related to the organizational milieu, methodological considerations, and conclusions.

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COMMUNICATION IN ORGANIZATIONS

LYMAN W. PORTER
UNIVERSITY OF CALIFORNIA, IRVINE

AND

KARLENE H. ROBERTS
UNIVERSITY OF CALIFORNIA, BERKELEY

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Project Directors

Robert Dubin
Lyman W. Porter

University of California
Irvine, California 92664

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Communication in Organizations[1]

Lyman W. Porter
University of California, Irvine

and

Karlene H. Roberts
University of California, Berkeley

In his valuable review of the literature (published through 1963) on communication in organizations, Guetzkow (1965, p. 569) concluded with two questions: "Do we find in communications in organizations an area of study in which there is special richness in contingent, interactive effects? Or is it merely that a clarifying perspective -- which would make the pieces fall more simply into the whole -- remains hidden?" Our answer, some eight years later, is "yes" to both questions: it is an area rich in "contingent, interactive effects," and a "clarifying perspective" does remain hidden. There have been some advances in the last decade or so with respect to increasing our understanding of communication as it is found in the organizational context, but we are a long way from achieving adequate comprehension.

No one needs to belabor the point that communication is pervasive -- and, therefore, important -- in organizations. Indeed, as a number of writers have suggested, the very extensiveness of communication in the social world in which we live is at the root of the problems involved in studying, analyzing, and understanding it. Since communication is everywhere in organizations, it is consequently very hard to find, in the sense of trying to separate it out

as a phenomenon for investigation. It too easily merges into other topical areas such as leadership, interpersonal relations, and the like. And, as we will stress later, the relative paucity of research directly focused on communication in organizational settings suggests that it is the "water" that the organizational researcher "fish" seem to discover last.

The problems of trying to define "communication" are well illustrated in a recent article by Dance (1970). His review uncovered some 95 definitions of the concept of communication -- many of them from articles written for the sole purpose of trying to provide "the" definition. By means of content analysis these definitions were reduced to no fewer than 15 themes or "conceptual components," such as "interaction," "transfer," "understanding," "process," etc. Dance concluded that it is "difficult to determine whether communication is over-defined or under-defined but its definitions lead [scholars] in different and sometimes contradictory directions." This viewpoint characterizes much of the literature and also indicates the probable futility in attempting to generate a comprehensive definition that will gain broad support. In everyday usage the term seems to imply the transmission of messages from senders to receivers, and we will leave it at that.

More useful than trying to produce a universally agreed-upon definition of the term communication is to remind ourselves of a recent observation of Schramm (1971, p. 17): "Let us understand clearly one thing about it: Communication (<u>human</u> communication, at least) is <u>something people do</u>. [Italics Schramm's.] It has no life of its own. There is no magic about it except what people in the communication relationship put into it. There is no meaning in a message except what the people put into it... To understand human

communication process one must understand how people relate to each other."

Given this broad orientation to the concept of communication, we can briefly note where the field stands with respect to progress in research and theorizing. In commenting on advances in developing useful models of communication, Schramm (1971, p. 6) draws the sober conclusion that "it would be pleasant to be able to report that [at least two decades] of ... broadening interest and effort [in developing a unified theory of human communication] have coalesced into a simpler, clearer model of communication. This is not the case." Thus, one looking for a single overall conceptual scheme that will help clarify communication, especially as it relates to organizations, is bound to be dissappointed. Even the early promise of the Shannon and Weaver (1949) type of information theory approach seems not to have been highly useful for those interested in communication in social contexts. We tend to agree with Chapanis' rather strongly worded comments in this regard (1971, p. 952):

> [The literature on communication/information theory] is essentially useless for our purposes. I have yet to find a single instance in which psychological research on communication theory has contributed to the solution of any practical psychological problem. For one thing, the bits, bytes, or chunks of communication theory are like mouthfuls of sawdust. They are as mindless as they are tasteless. Communication theory is concerned only with the randomness or, conversely, with the statistical organization of messages.

It ignores completely their sense or content."

The picture with regard to progress in the empirical realm is, perhaps, not much better. It seems clear that the earlier hopes of Guetzkow (1965) -- concerning the status of the research literature at the time of his review -- have not been realized: "...with the dearth of studies about [communication in] organizations...one can but join with others in speculation. Let us hope that the writer's foolhardiness [in making extrapolations from research in other settings] will serve to provoke the development of an abundance of insightful, empirical studies in the very near future" (p. 535). In point of fact, rather than increasing, the amount of research on communication in organizations seems to have fallen off considerably since the time of that review. The reasons for this decline are unclear and, we suspect, the phenomenon is likely to be relatively temporary.

In any event, however, there has been a certain amount of research since the time of Guetzkow's review, and it is that literature that will form the basis of this chapter. (Other past reviews that the reader might also find helpful are Thayer (1967) on "communication and organization theory," and McLeod (1967) on "the contribution of psychology to human communication theory"). We will, therefore, emphasize studies published during the past 10 years; it will often be necessary, though, to refer to earlier work in order to develop the thread of research or conceptualization in a given area and such studies will be included where they seem appropriate. Throughout the chapter the thrust will be on <u>implications</u> of research and theory for <u>communication behavior in organizations</u> -- particularly work organizations.

Achieving a coherent way to organize the rather diverse set of material

relevant to a chapter dealing with communication always presents a problem. There are multiple ways to order it, all of which have some merit; undoubtedly, though, there is no single way that will be unequivically best or most useful. As an example, we considered the possibility of organizing along the lines of the communication/information model: source - encoding - transmission - decoding - destination. While useful for some purposes, though, it did not seem to hold great utility if one's interest is in what happens in organizational settings. The sequence finally adopted was the following: First, we will examine what organization theorists have to say about the role and place of communication. The next two sections will include a review of the major portion of the relevant studies. One of these sections deals with studies oriented to the interpersonal milieu that have implications for person to person communication in organizational settings. The other contains studies aimed more specifically at the organizational milieu. These sections are followed by a consideration of some methodological issues, particularly as they relate to field investigations carried out in ongoing organizational settings. The final brief section contains a few basic conclusions derived from our overview of the material in this chapter.

What Organizational Theory Says

Organizational theory might seem an appropriate place to look for conceptual clarification of our thinking about communication in organizations. A review of the literature shows, however, that writers in this group have not been very clear about what they mean by organizational communication. They do, though, give high priority to other organizational phenomena, and we can

discern from such priorities some elements of organizational communication systems they might think worthy of more conceptual and empirical attention. For convenience we briefly mention here four categories of organizational writers (classical-structural, humanist, decision theorists, and process or systems views) citing as examples only a few of the writers who might fall in each category, and asking "how might they direct our focus on organizational communication?"[2]

Classical Structuralists

The classical structural writers (Fayol, 1949; Gulick and Urwick, 1937; Mooney and Reilley, 1939; Taylor, 1911; Weber, 1947) viewed organizations as closed, static systems, with work efficiency as the appropriate outcome variable. Their attention was directed, then, to the impersonal and least complex aspects of work organizations, in which job performance was assured through the development of work programs or routines that were to be rigidly followed by employees. Programs were enforced through extrinsic controls, and the organization was described in terms of its internal structural (authority, span of control, etc.) relationships. Communication was seldom, if ever, specifically discussed by the classical writers, but one could extend their work to describe formal communication channels in organizations and the nature of their content. Downward communication and communication efficiency would be emphasized as would the use of communication systems for authority, coordination, and control purposes. By and large the classical principles, such as responsibility and span of control, are difficult to apply to organizational communication because they are so broad and elusive.

The Humanists

Reacting against the preoccupation of the classical structuralists with formal structure and hierarchy, another group of writers, labeled here the humanists, focused on informal communication systems and group interactions within organizations. McGregor, Argyris, and Likert, are illustrative of the humanist approaches to organizational communication. Strangely, McGregor (1960) ignored almost totally the role of communication in developing democratic, participative, Theory Y (as opposed to autocratic Theory X) management. The closest he came to detailing any aspect of communication appears to be in recognizing its importance as the means by which organizations exercise their power and through which members can develop mutual understanding of one another (McGregor, 1967).

Argyris (1957, 1960) goes no further in speaking directly to aspects of organizational communication. In emphasizing the frustration which results from conflict between the needs of the mature individual and those of the formal organization, Argyris notes that frustration leads to a number of adaptive (from the viewpoint of the individual) processes including withdrawal (lack of communication) and the creation of informal interactions to sanction activities not sanctioned by the formal organization. Whether or not the informal communication system is disruptive to ongoing organizational activity is not yet known. Surely its content, network characteristics and its impacts should be better understood if this question is to be answered.

While Argyris mentions only briefly the potentially dysfunctional aspects to organizations of informal interaction, Likert (1961, 1967) specifically prescribes the use of informal networks for the purpose of creating healthier

organizations. In fact, his earlier book devotes an entire chapter to problems in organizational communication which points out some of the variables, such as lack of trust, that may adversely affect interpersonal communication. In his later book, Likert discusses communication as an aspect of group decision making and of various kinds of management systems. He says "communication refers to a variety of kinds of activities (1967, p. 143)" but he is not very specific about the composition of such activities. Increased communication within and across hierarchical levels is, however, the key to effective management for Likert: "In System 4 organizations ... the principle of supportive relationships is applied and group methods of decision making are used in a multiple overlapping group structure. These two variables lead ... to intervening variables, such as ... excellent communication.... These and similar intervening variables in turn lead to low absence and high turnover... (1967, p. 138)."

None of the theorists who might be labeled humanist is very specific about what particular communication components are, nor do they offer testable hypotheses about the relationships of communication and other organizational variables. Some of their other organizational concerns, however, provide a new direction to the communication researcher in organizations. Their obsession with the importance of participative leadership, group interaction, motivation, and job satisfaction in organizations leads one to ask what kind of communication factors are correlated with various leadership styles and motivators. The development of more group interaction, for example, probably requires numerous open communication links which may easily

become overloaded. Attempts to develop mutual trust and confidence between superior and subordinate undoubtedly influence the information which passes up and down inside organizations; the result may be reduced distortion combined with considerable additional channel noise and overload.

The humanist approach forces us further inside the organization than did the structural approach, and it adds to our previous more simple view of organizational communication a richness missed by observing only formal communication systems. This richness includes concern for affect and feeling transmitted between individuals and groups, and the possible influence on communication of other internal organizational phenomena such as leadership and motivation.

Behavioral Decision Theorists

Considerably more complex in their views than the classical structuralists, but directing less attention to the broad range of human behavior than the humanists, are the behavioral decision theorists (not to be confused with the mathematical decision theorists). These writers tend to see organizations as functionally specialized, goal-seeking, decision-making structures.

Simon (1945), March and Simon (1958), and Cyert and March (1963) are representative theorists in this camp. In their view, individuals in organizations are unable to make complex rational decisions without limitations imposed by organizations. These limitations include such things as definition of member roles and subgoals which guide decisions, formal rules, well-defined information channels, and training programs which narrow the range of alternatives considered in decision-making. March and Simon (1958) specifically address the issue of communication in organizations, noting that its

primary purpose is to transmit procedural information. They indicate that only incomplete information is available in communication channels for decision making. Organizations insure their own adequate functioning by establishing communication systems with specific information classification schemes built into them. "Uncertainty absorption," according to March and Simon, is the successive editing of information which occurs as it passes through these communication systems. This editing is greatest for information which fails to fit the extant classification schemes or for information entering already overloaded systems. Such data must be pushed, shoved, and altered until it fits the system. March and Simon's discussion draws the organizational communication researcher's attention to problems of how information is reduced or summarized in transmission and of defining components of information distortion and gatekeeping.

Like the other organizational writers discussed to this point, the decision theorists view organizations as static entities, little influenced from outside. Neither they nor the structuralists suggest the need to examine the influence of individual behavior on communication in organizations. They do, however, direct us to consider how information is changed in formal communication systems, thus substantially adding to our view of organizational communication.

Process or Systems Theorists

Only a few of the writers who might be called process or systems theorists (Katz and Kahn, 1966, Thompson, 1967, Weick, 1969) have anything specific to say about organizational communication. Process or systems approaches further direct our attention away from simple bivariate independent-dependent variable

relationships and towards a multivariate view of organizational communication where the environments in which dynamic organizations live are important determinants of their behavior.

Weick (1969) provides an example of this kind of thinking in his extension of the March and Simon notion of uncertainty absorption. Weick states that organizations are information processing organisms existing in uncertain environments. Organizations are mechanisms for uncertainty absorption and must, to remain viable, process messages with the same degree of equivocality-unequivocality as in the message itself. A testable proposition derivable from Weick is that when organizations handle unequivocal information equivocally they lose opportunities, thus leading to atrophy.

As stated previously, in sum the organizational writers offer surprisingly little help in our search for ways to view communication in organizations. From them we gain only a few diverse notions about explicating organizational communication as a variable. From the classical structuralists we obtain the rather simplistic observation that communication might be related to organizational efficiency. The humanists move us to consider the role of individual behavior in organizational communication systems, while the decision theorists emphasize the programs organizations build to insure their efficiency and the fact that information is changed as it moves from place to place in organizations. Finally, the systems theorists direct attention to forces outside the organization which influence internal communication, and to organizations as information processing mechanisms. Not only are specific discussions of communication relatively infrequent in the organizational literature, there also are few attempts to integrate the

different approaches to organizational communication extrapolated from this literature. Such integration is probably a necessary prerequisite to the development of viable theories concerned with organizational communication.

The Interpersonal Milieu

Extending on the general view of the humanists and looking down into organizations, we might first examine the existing theoretical and empirical evidence concerned with interpersonal communication, and ask how it can help direct our focus on organizational communication. Since the social process of communication involves more than one individual, one boundary of our analysis in this section is intrapersonal communication. While it is true that man communicates with himself about all sorts of matters, the empirical work in this area is more accurately categorized as either "perception" or "cognition" than as "communication."

The opposite boundary of this section is concerned with organizational role and structural influences on communication (the substance of the next section). It is artificial to try to understand interpersonal communication without simultaneously viewing impingements on it. Nevertheless, most conceptual discussions of interpersonal communication fail to consider how it is influenced by the situation in which it occurs. We are, then, left with the task of estimating the degree to which theories developed from studies conducted in settings (often laboratory) frequently devoid of the richness of everyday organizational life are generalizable to communication in organizations.

Within these limits, this section attempts to address a number of issues.

First we will define interpersonal communication somewhat more explicitly. Second, we shall look at some models which might help us understand the process. Finally, we will briefly review the relevant, recent, empirical work.

What is Interpersonal Communication?

Interpersonal communication is more specifically defined than is organizational communication. It is an interactive process which includes an individual's effort to attain meaning and to respond to it. It involves transmission and reception of verbal and non-verbal signs and symbols which come not only from another person, but also from the physical and cultural settings of both sender and receiver. The receiver attempts coherent organization of the information in the signs and symbols and may further respond on the basis of the organization.

As Schramm states: "However we may choose to draw a diagram of communication, we must remember that the process itself is more complicated than any picture or description of it that we are likely to put down. Most of the communication process is in the 'black box' of the central nervous system, the contents of which we understand only vaguely. When we describe communication, we are therefore dealing with analogies and gross functions, and the test of any model of this kind is whether it enables us to make predictions -- not whether it is a true copy of what happens in the black box, a matter of which we cannot now speak with any great confidence (1971, pp. 24, 25)."

Certain aspects of organizational life surely have important influences on communication. For example, the frame of reference of people at work may be different from their frame of reference at home. We might hypothesize that their "at work" communications are more guarded than their "at home" communications because at work there are more uncertainties about the frame of reference. The overlap areas, that is, the areas people can communicate about, are probably different in organizational settings than elsewhere. Consequently, messages sent and received will have different characteristics in work organizations. We can hypothesize, for example, that they are less impersonal, shorter, often more specific to the situation at hand, than are messages sent and received in other kinds' of situations.

Models of Interpersonal Communication

The term model is used here loosely. The available work can be more adequately described as low fidelity road maps than as rigorous formulations. Good models provide frameworks for assumptions, identify critical variables, postulate relationships, and explain and predict communication phenomena. Such sophisticated models have not yet been developed for interpersonal communication.

The best developed theorizing about interpersonal communication comes from scholars primarily interested in attitude formation and change. They consequently focus on the effects of communication attempts as opposed to the process of communication. McGuire (1969), who offers a comprehensive and skilled review of the nature of attitudes and attitude change, states that "because of our stress on attitude change through communication from other people a large part [of the work in the area] could alternatively be

titled 'social influence process'" (1969, p. 136). Unfortunately, social interaction theories coming from attitude research are not adequate to the task of describing, much less analyzing, the totality of interpersonal communication in organizations. Nor, for that matter, is any other available body of work.

Here we indicate some fragmentary conceptualizations which might be expanded and synthesized by creative theorists to develop nomological networks to guide future empirical and theoretical development specific to communication in organizations. In the past, individual researchers or teams have tended to focus on only one aspect of communication. Some writers give primary attention to the interactive process to which other elements are bound. Some focus on a single aspect such as the meaning attached to a message, or individual differences in communication behavior. Still others look at communication effects. We need theoretical attempts which simultaneously consider all of these aspects and more.

Where in the interpersonal literature can the organizational researcher most profitably begin to study communication? It may be that he will initially learn the most by looking at those conceptualizations which concern the interaction process, because process is at the heart of the communication act. Other facets, such as meaning and effects are attached to and ultimately derivable from the communication process. Tying all these elements together -- process, meaning, and effects -- is necessary for adequate theory building.

Interaction process. Attention to the larger process of interpersonal communication begins with Shannon's (1948) work. His descriptive model

identified the information source, message, transmitter, receiver, and destination, as components of the communication system.

While many process models of communication now exist (Thayer, 1967), only two are mentioned here because they may be particularly useful to organizational researchers. Wiener's (1954) feedback principle is a critical aspect of the communication model proposed by Westley and MacLean (1957). In their model, person A abstracts and codes various elements from his environment. He transmits them to person B, whose environment may or may not include these same elements. B responds and A has feedback about his own communication behavior. Westley and MacLean explain that some transmissions intentionally and some unintentionally modify the behavior of others. The notion of intention is important in their model and in other models of verbal communication (Carroll, 1953; Fearing, 1953).

This model might be extended by theorists to deal specifically with communication in organizations. Aspects of the environment which impinge on the process might be explicated so that one can estimate the degree to which A and B simultaneously respond to similar external stimuli. The notion of feedback which continually modifies interaction behavior is crucial in situations in which rewards and punishments are critical. People probably respond to very minimal and subtle changes in the behavior of others when they think their rewards are contingent on making such responses.

Thayer (1967) presents a systems approach to interpersonal communication which he discusses in the context of a scheme for visualizing the complexity of phenomena involved in organizational communication. Four basic levels of analysis are involved in understanding organizational communication. They

are the technological, sociological, psychological, and physiological levels. Thayer's interpersonal focus is derived from the sociological and psychological levels, and his system includes some discussion of the environments in which people communicate.

In any two person discussion between A and B, A's world consists of his self concept, his concept of B, and his concept of the object of their communication. B's world contains his conception of these three things. The two persons interact, each processes data consistent with his own world and then behaves on the basis of these data. The behavior is potential data for the other person. Rather than emphasizing interaction as do Westley and MacLean (1957), Thayer focuses primarily on the psychological system of the individuals involved in communication, stating that "if the individual is viewed as a complex information processing system, research on human behavior in organizations could be based upon a view of the individual as the focal point of a set of information vectors that define that individual's functional role in that organization" (1967, p. 97).

One might extend this view to suggest that because of their functional activities, certain organizational units (and certain individuals in those units) act as magnets in communication networks. They attract specific information which is responded to, modified, sent on, or held back. It may be possible to uncover the rules governing such processes.

Meaning. Since message meaning is an underlying factor in any communication, it and communication effects are the two non-process conceptual aspects we will consider here. Meanings are attached to both verbal and nonverbal stimuli.

It is thought by some writers that linguistic categorization determines perceptual response and ultimately influences social interactions. Anthropologists (Boas, 1940; Sapir, 1921, 1929) first noted that languages differ grammatically. Whorf (1941) argued that the grammar of a language determines a person's ideas. The various effects of language on an individual's perceptions and on his cognitive organization of the world have not been clearly differentiated. This and related problems in understanding the influence of language on the establishment of meaning are discussed by Tajfel (1969, pp. 71ff), Carroll and Casagrande (1958), and others.

Osgood and his colleagues (Osgood, Suci, and Tannenbaum, 1957) were also interested in the meaning of verbal behavior. The basic assumption of their well known semantic differential technique is that meaning can be mapped in semantic space. Applications of Osgood's technique have been made primarily in describing attitude objects. More relevant to the problem of establishing communication meaning, Triandis (1960a, 1960b) showed that individuals with high degree of semantic similarity communicate more effectively than semantically dissimilar people. Runkel (1956), also interested in problems of categorization, extended verbal meaning to cover larger areas of semantic space. He found that people communicate more effectively the more similar they are in the way they dimensionalize cognitive space. Such similarity exists when people order the objects of their opinions along the same rather than different dimensions. Using these concepts, researchers might assess the degree of effective communication in an organization in relation to the cognitive similarity of people at different levels or in different functional units.

Mehrabian and his co-workers (Mehrabian, 1966; Wiener and Mehrabian, 1968) provide one innovative step in the study of meaning. They present a model for conceptualizing an aspect of verbal meaning they call "immediacy." Immediacy is the degree of psychological separation between a speaker and the object of his communication. The statement "my subordinate and I decided on this plan" is less immediate than is "we decided on this plan." Wiener and Mehrabian suggest relationships of immediacy to other variables. A major hypothesis generated by the model and supported by considerable research is that non-immediacy reflects "increasing degrees of a communicator's negative affect, evaluation, or preference" (1968, p. 38). Perhaps individuals with little cognitive similarity express less immediacy about one another than do those of greater cognitive similarity. While the notion of immediacy appears useful in organizational research, it is unfortunate that a variety of similar constructs of verbal meaning are not available. From these we might be able to develop schemes for the integration of various components of message meaning.

To understand meaning fully, researchers must simultaneously attend impinging verbal and non-verbal cues. Behavioral researchers have been little concerned with the integration of verbal and non-verbal models. These two aspects of communication are primarily treated in the literature as independent entities, and one often comes away with the impression that they are mutually exclusive. Even worse, non-verbal researchers are usually interested in one kind of cue or another (i.e. the meaning and use of space or the meaning of facial expressions), instead of considering how various non-verbal cues combine to provide meaning.

An example of one of the better attempts at integrating the non-verbal research is Argyle's work. Argyle and Kendon (1967) extend a model of sensorimotor performance (Broadbent, 1958; Welford, 1958) to cover social interaction. They say that a primary characteristic of interaction among people is that it is continually under the control of sensory input. Interacting individuals are engaged in skilled performances based on the performer's goals, perceptual input, translation, motor out-put, and changes in the outside world which might act as feedback to the performers and determine how they modify their behavior.

Argyle and Kendon differentiate features of performance which are constant throughout an interaction (e.g., posture) and "set the stage" or provide a backdrop for that interaction, and the dynamic features which have a variety of functions depending on the encounter considered. They note that their analysis is sketchy, but attempts to understand the matrix of verbal and non-verbal cues to which meanings are attached by receivers in any situation seems a necessary step in developing models of interaction appropriate to organizations. Such models should explain how interactive cues combine with situational cues to determine the ultimate meaning to interactions and the responses they make to these meanings.

Effect models. The rapidly growing area of attitude research has spawned a number of balance models which have made some contribution to communication research. All of these models focus on the consequence following presentation of a message by a source to a receiver. Heider (1946; 1958), who developed the first of the balance models, emphasized three elements (the person, another, and an impersonal entity) connected by sentiment or unit relation-

ships such as liking or similarity. The sentiment relationships among the three elements can be consistent or inconsistent with one another.

Extending from Heider, Feather (Feather, 1965; Feather and Jeffries, 1967) presents a balance approach specific to communication effects, and evidence supporting his model. Feather details the basic communication situation as one in which a source (S) presents a communication (C) about an issue (I) to a receiver (R). Sentiment and unit relationships among the four elements may be positive or negative. Perhaps the only significant difference between Feather and the other balance theorists is that he adds a C to an already complex formulation. Feather also notes some of his model's critical problems. These problems concern representation in the model of: a) strength of relations, b) the importance of the issue, c) specific effects of imbalance, and d) individual differences in reactions to imbalance.

Feather's is the only balance model which specifically discusses communication effects, but it is probably not as applicable to organizational communication as some other developments might be. The balance models generally focus on attitude change in individuals rather than simultaneously considering the linkage among individual and organized behavior. Neither do balance models consider the simultaneous impact on individuals of messages coming from several others or the implication of various messages when the receiver knows the positions of the senders in the organization. Such models are not broad enough to consider the overall organizational expectations governing what individuals will extract from a message and how they will respond to it. Finally, balance models do not consider time as a facet of

communication. Organizational life goes on and on, and the consequences of a message are probably different if viewed in the long rather than the short time perspective.

Empirical Investigations

The available empirical work on interpersonal communication was sometimes done to develop or support one or another of the communication models. However, there are also a number of studies not specifically addressed to any given model. Following the communication process from beginning to end, one can place the research in categories concerned with pre-communication, source, process, meaning, and effect variables.

Pre-communication variables. The situation in which one finds himself, the personality he brings to it, and the cultural milieu in which it is embedded, obviously influence his susceptibility to any communication. As previously noted, we know extremely little about how the situation influences communication. Some minor evidence suggests that distracting situations (Osterhouse and Brock, 1970), familiar situations (Chu, 1967), and friendly versus non-friendly situations (Heller, Myers, and Kline, 1963; Nemeth, 1970) affect the responses of interactants in them.

It is obvious that personality is one determinant of how people respond to various communications (Diab, 1965; McCoombs and Smith, 1969). When people meet for the first time, as happens every day in organizations, the degree to which they perceive each other as similar in personality (as well as cognition, mentioned previously) may set the stage for communication because, as Byrne and Griffitt (1969) note, people who see themselves as similar to one another tend to be attracted to one another.

The relationship between an individual's self-esteem and the degree to which he can be influenced has received greater research attention than the influence on individual change of any other personality characteristic. "Significant positive, negative, and non-monotonic relationships have been found between self-esteem and influenceability... The barrage of results seems explicable only in terms of an overall inverted U relationship..." (McGuire, 1969, p. 250). The interpretation of such results requires, of course, the development of a complex theory. Other personality characteristics possibly related to the communication process have not been well studied. Organizational researchers should probably be less interested initially in personality determinants of communication than in situational or cultural determinants which may have greater impact on the process, and which sometimes can be more readily changed or modified.

While we are certain that racial or cultural factors impede communication in bi-racial or bi-cultural groups, we have little information about how they do so. Porter (in press) reviewed this area by extrapolating from single race interaction studies. He called attention to the meager evidence available from bi-racial investigations, pointing out that "there is an extreme scarcity of directly relevant research concerned with interracial communications in organizational settings." One aspect of interaction frequently seen in organizations is the interview situation. Relevant to this, Sattler (1970) reviewed studies concerned with the "experimenter's" race. He finds that "respondents give socially desireable responses to interviews of races other than their own, except when interviewers occupy a high status role (1970, p. 137)." Since in organizations the status

relationship between interviewer and interviewee is often critical, and the bi-racial problems in interaction dysfunctional to the organization, more attention should be given the simultaneous influence on communication of both role and race. Sattler indicates the limitations and problems connected with conducting bi-racial research.

Source characteristics. Experimenters concerned with source characteristics have been interested primarily in communicator influences on attitude change, thus placing emphasis on the influence of communicator characteristics on communication results rather than on the communication process. McGuire (1969, Pp. 177-200) reviews the literature in the area to 1966, discussing different persuasive tactics favored by various (purported rather than actual) sources, methods for studying effects attributable to source variables, and components of source valence.

Source valence probably is the most thoroughly investigated characteristic. McGuire (1969, p. 179) states that current thinking is summed up in the postulate that the three components of source valence are credibility, attractiveness, and power. These characteristics may be particularly important mediators of how messages are received in work settings, but are not well researched in such settings. A first step might be to differentiate personal and role characteristics of the source as they influence responses to various kinds of messages or as they influence the communication process in organizations. For example, how do source importance (often related to job level and power in organizations) and personal attractiveness combine to determine the response made to directives sent from the president's

office down into organizations? Because so many researchers have been interested primarily in how sources influence attitude change, and because organizational researchers are often as interested in other outcomes, research directed to source effects on message implementation or on other aspects of organizational behavior might be most productive in filling the knowledge gaps about source influences in organizations.

Communication process. A number of critical questions about the process of sending and receiving messages in organizations have never been asked empirically. Three of these might be considered in initial research on the communication process in organizations. One problem is how information comes into organizations. A second problem is how information is internally initiated in organizations, and a third problem concerns how information is transmitted, regardless of its origins.

Perhaps the process of getting information into, and from place to place, in organizations is analogous to that of a virus or other foreign body entering the human being. Where and how does it enter in the first place? Do humans attract certain viruses or is entry a chance phenomenon? Once inside, how does the foreign body travel and where does it lodge? How does it change as it moves? Does the body facilitate or inhibit movement? What forces are mobilized to alter or erradicate the foreign material and how? Do foreign bodies move along special routes to arrive at the heart or central nervous system? How are decisions made about what arrives at these vital, life giving, points? What is done to foreign bodies once they are "at the heart of the system"?

Researching the question of how information gets into organizations presents some difficult conceptual problems. For example,

disentangling the influences on information transmission of source and process is probably not operationally possible. Several investigators illustrate this difficulty. Allen & Cohen (1969), for instance, identify the kinds of external sources used by organizational gatekeepers for obtaining information in R & D laboratories. The classic studies of gatekeepers in newspaper organizations (Bass, 1969; Breed, 1955; White, 1969) also do this, in addition to concentrating more on the process of information transmission across organizational boundaries. Focusing on reporters as occupants of boundry roles in newspaper organizations, these studies show that the content of information accepted into the organization is often determined by its perceived importance by the reporter's image of what readers want, by his perceptions of what his own reference group will accept and by the unwritten policy of his newspaper. These findings should be extended to other kinds of organizations. Researchers might attempt to specify the criteria used by people at organizational boundaries for assessing the importance of various kinds of information and for determining whether it will be accepted by the organization. They might then look at the influence of other boundary personnel (in one's own or in other organizations) on an individual's propensity to allow information to enter his organization. Finally, researchers might look at how importance, acceptability, and influence of one's reference group are weighted in determining what information enters organizations and how it is altered at the boundaries.

A second problem in considering organizational communication as a process concerns internal initiation of information. We know of no empirical work which systematically compares internally and externally generated information. However, one might suppose that they are different in content and use, and perhaps travel along different routes inside organizations.

While the origin of information probably influences how it is transmitted once inside organizations, the research literature relevant to trans-

mission does not consider point of origin. We do know that information is distorted as it goes from group to group (Allport and Postman, 1965; Caplow, 1947). We might apply to organizational transmission such Gestalt concepts as levelling and sharpening, or assess in organizations the occurrence of those systematic errors in communication discussed by Campbell (1958). In addition, such issues as how qualitative versus quantitative information is absorbed by groups and individuals as it moves from point to point in a system should be examined by organizational researchers. Some evidence shows that distrust influences information transmission and distortion in organizations. Mellinger (1956) reports, for instance, that in a government research organization where a communicator distrusts a recipient, the information he sends that person is distorted. Read (1962) provides similar findings in an industrial organization. The extent to which distrust is a barrier to communication is likely influenced by the perceived status of communicator and recipient and by the nature of the issue communicated.

The channels along which information travels appear to be important aspects of its processing. When written and oral channels are compared we generally find that comprehension is greater when information is transmitted in written form, but opinion change is greater in face to face situations. Psychologists have been generally disinterested in media questions and the available comparative studies of media say almost nothing about the process of transmission (McGuire, 1969). It seems logical that multi-media transmission reduces information distortion, but the research findings relevant

to this are equivocal (Anderson, 1969; Hsia, 1968).

Once information reaches a group or individual who can act on it, the communication process is possibly different from that which accounts for getting information to appropriate places in the organization. If nothing else, face to face communication is more likely to predominate when information is acted upon in groups, with other media being used extensively to transmit information across groups. The group task may determine the appropriate media for communicating about it. Where information transmission is necessary to problem solution a number of factors should be examined. Researchers must at least be concerned with the influences on the group of the amount of information in the group, order of information presentation, and opportunity for feedback. In this connection, Shaw (1963) looked at the effects on the group of varying the amount of information possessed by any one member. He found that the amount of information an individual held was related to when he entered the discussion, how much task oriented information he initiated, whether he was accepted by the group, perceived as helping them, and selected as a leader.

A great deal of attention has been devoted in the empirical literature to order of presentation of material because of the folk wisdom that material presented first has the greatest impact on the individual or the group. That work is adequately covered elsewhere (See Cohen, 1964; McGuire, 1969). A number of hypotheses exist to account for influences of order of presentation. However, most of the work has been done in the laboratory and probably is of limited usefulness to communication in organizations

where there are continuing information exchanges and many opportunities for repetition.

Meaning. "I think you believe you understand what you think I said, but I am not sure you realize that what you heard is not what I meant." This statement reflects the problem of establishing communication meaning, a problem which has generated a great deal of research attention. Much of the important work on understanding meaning will eventually come from studies of perceptual phenomena. Issues such as those dealing with assimilation and contrast effects (Hovland, Harvey, and Sherif, 1957; Sherif, Sherif, and Nebergall, 1965) or the etiology of how perceptions are meshed into ongoing cognitive systems have generally not been extended to the communication literature. Yet understanding these and related phenomena will substantially add to our knowledge of communication meaning.

Considerable research concerned with verbal meaning exists. Here we mention just a few of the research questions which might be extended profitably to organizations. Perhaps researchers might first be interested in specifying the kinds of information people select for attention from the buzzing confusion of their organizational worlds. An extension of the well-known Hovland work (Diab, 1965) indicates that if one has strong attitudes toward an issue, he tends to select for attention (media containing) information redundant to those attitudes. If his attitudes are less strong perhaps he can be less selective about the meaning to which he exposes himself. The meaning inherent in what one exposes himself to interacts with the template of meaning he carries with him, a template partially structured

by the organizations with which he is identified. Strong attitudes are perhaps derived from complex templates and the new information which can be superimposed must fit fairly well with the existing template, or be ignored.

An example of another question of verbal meaning which might be considered in organizational communication concerns the inherent factors in verbal messages which contribute to their meaning. McGuire (1969) discusses two factors: pathos and logos. "An argument is said to use pathos if it involves creating the appropriate feelings in the receiver by appealing to his feelings, values, and emotions.... In logos appeals the receiver is required to deduce the position being argued from a general principle which he accepts, or induce it from empirical evidence he accepts by means of logical argumentation" (p. 201). We do not know the relative difference in meaning of appeals based on emotion versus those based on logic. Besides pathos or logos, other factors are also inherent in any specific appeal. The problems of disentangling all the meaning factors in messages, and of understanding their interrelationship and relationship to other behaviors, appear to be enormous.

Man has the unique capacity for conveying meaning verbally, but like other organisms his silences and extralinguistic manifestations also convey meaning. For example, combinations of laughter and silence have been shown (Oleson and Whittaker, 1966) to express the strains of an organizational situation in which employees were learning their jobs. Language is usually accompanied by additional meaning cues and verbal silence is often filled with such cues. In fact, non-verbal cues may have more impact than verbal

ones on the meaning respondents infer (Argyle, Saller, Nicholson, Williams and Burgess, 1970; Mehrabian and Ferris, 1967, Rosenberg and Langer, 1964), and it is to these that we now turn our attention.

Recently, more research useful to applied psychologists has dealt with non-verbal than with verbal meaning, but as previously stated, comprehensive communication models have yet to be developed from this work. Non-verbal research has focused on paralanguage, body, and spatial cues to meaning. Duncan (1969) recently reviewed this research covering six modalities: a) body motion, b) paralanguage, c) proxemics, d) olfaction, e) skin sensitivity, and f) use of artifacts. Of these, body, motion, proxemics, and paralanguage have received the most empirical attention. Duncan indicates the research strategies in the area and some of the questions which should be studied. Interested researchers should consult Duncan's (1969) and Mahl and Schulze's (1964) reviews of non-verbal phenomena. Two non-verbal modes of communication are probably of greatest interest to organizational researchers: the use of the face (particularly where its cues are inconsistent with verbal cues); and the way in which people at work use space to convey meaning.

The face seems to be the best of man's non-verbal communication devices, and the eyes the most expressive aspect of the face (Duncan, 1969). Davitz (1964) states that emotions can be expressed intentionally and can be recognized reliably regardless of the mode of expression. Non-verbal manifestations of affect can be accurately inferred from facial, postural, and distance cues (Mehrabian, 1968), and appear to be pan cultural and innate (Ekman, Sorenson and Friesen, 1969). Ekman and Friesen (1969) indicate that

we evidently communicate non-verbally that part of a message we wish least to take responsibility for, and we are not good non-verbal liars. For example, a superior may tell a subordinate that things are going well in their work unit, when the expression in his eyes suggests something different to the subordinate. Organizational researchers might, based on findings such as those mentioned, design studies which simultaneously observe verbal and non-verbal facial behaviors, particularly since much non-verbal behavior may be more pervasive and less tied to socialization than we have heretofore thought, and since our everyday inferences about what people mean in interpersonal communication are primarily based on combinations of facial and verbal cues.

With desks, chairs, and offices serving as major non-human components of the work environment, the organizational psychologist might turn greater attention to understanding how people use space and furniture as communication devices. Hall (1963) defined as static aspects of interaction the physical distance between interactants, the presence or absence of physical contact, the form that physical contact takes, eye contact between interactants, and the use of thermal and olfactory cues. Later, he showed (1964) how these components combine to define different distance sets, and provided (1966) some interesting notions about the meaning and use of these features by people in different cultures. More recent reviews of the literature concerned with proxemics are offered by Duncan (1969) and Sommer (1967). Sommer points out that "knowledge of how groups arrange themselves can assist in fostering or discouraging group relationships (1967, p. 150), and he provides examples of how spaces can be designed to enhance or discourage different kinds of group activity.

Even if we had adequate empirical evidence on verbal and non-verbal meaning, the question remains as to how it might be integrated. Sheflin (1968) describes the form of human behavior in terms of behavioral units which are combined in programs of activity. Participants in face to face communication perform and recognize standard, consistent, behavioral units. When these units are combined into programs, interactants in specific programs infer from them similar meaning. If one could identify specific programs operable in various circumstances and learn how these programs are integrated with other programs as circumstances change, he could possibly develop theories useful to understanding organizational behavior.

Communication effects. From the receiver's viewpoint a communication may help him better understand the phenomena of his world, learn more, enjoy, dispose of, or decide upon some issue (Schramm, 1971, p. 19). All of the pre-communication and communication variables previously discussed constrain responses which might be made to them.

A loose cause-effect model underlies all research questions of communication effectiveness. Effects are judged in terms of observable responses following in time some communication stimulus. We obviously choose to observe only some responses following a message and to infer an effect if the response is conceptually related to the concept and/or intent of the message. Undoubtedly, many consequences of communication are simply never noted, because we are at the mercy of the indicators of effect we choose to measure. "Regardless of which responses or behavior we choose to measure, most observable indicators of communication are, at minimum, one step removed from the fundamental locus of effect. Communications do not directly mediate

overt behavior. Rather, they tend to affect the ways a receiver organizes his image of the environment, and this organization influences the way he behaves" (Donald Roberts, 1971, p. 361).

Roberts' (1971) review of the literature leads him to the following generalizations about how messages affect receivers:

1. People's interpretations of messages tend to follow the path of least resistance.

2. People are more open to messages consonent with their existing attitudes and beliefs.

3. Messages incongruent with beliefs engender more resistance than do congruent messages.

4. To the extent that individuals value need fulfillment, messages facilitating need fulfillment are more easily accepted than messages which do not.

5. As the environment changes, people become more susceptible to messages which help them restructure that environment.

Most of the empirical work on communication effects deals with attitude change. This is not surprising since internal attitudes are supposedly closer to the locus of message impact than are resultant behaviors. The attitude change literature is thoroughly covered elsewhere (McGuire, 1969; Fishbein, 1966; Insko, 1967; Kiesler, Collins and Miller, 1969), and researchers interested in communication effects in organizations should survey this literature. In all communication effects studies change is chosen as the indicator of effects because it is simply impossible to measure the consequences of a message on some non-changing attitude or behavior. Here we will consider briefly evidence about communication impact on the general beliefs or opinions of an individual, and on his behavioral changes.

What happens when people's beliefs are attacked? Generally they change

their opinions in the direction of the attack position or they maintain their original opinions. The mode employed to do either of these is usually consistent with the least expenditure of effort. Communication itself may be tension reducing in such situations, with active forms such as encoding more effective than passive forms such as decoding (Lynch, 1967). As implied in our discussion of message meaning, in situations where beliefs communicated are not central to the receiver or his self-image, he probably responds differently than where those beliefs define or defame his self-image. In work organizations one's self-image may be questioned when he finds himself in disagreement with those who have power over him or when his work is criticized by a superior. In such circumstances individuals must develop ways of dealing with the situation. Little evidence exists about these mechanisms, but Steiner, Anderson and Hays (1967) show that in interpersonal disagreements, stress is reduced by underestimating the degree of disagreement. One mechanism for doing so is illustrated in Burns' (1954) investigation which points out that while superiors interpret certain of their comments to subordinates as instructions, subordinates view the same communication as helpful information. The interpretation of consequent effects of communication must, in part, be a function of the degree to which the recipient sees his attitude position as similar to that of the sender.

Many researchers have attempted to link opinion and behavior change. The linkage is complex. Greenwald (1965) suggests that prior commitment, before attitude change attempts, innoculates one against behavior change. About all we know is that sometimes behavior change can be produced by persuasive communication (Greenwald, 1965; Schein, 1956). Whether attitude change precedes or follows behavior change is of primary interest to behavioral therapists (Bandura, 1969). The investigations of behavior modification through communication are not conceptually

integrated, but suggest some interesting problems for the organizational researchers. For example, if an organization purchases an advertising campaign which portrays it as socially responsible, do members of the organization upon exposure to the campaign alter their attitudes, behaviors, or both in the direction of the message? Or, what kinds of behavior change in organizations can be reinforced through the usual reward systems without resulting in employee animosity toward the behavior required by the change?

Summary

The theoretical and empirical work concerned with interpersonal communication is spotty at best. Most of the research findings are based on laboratory investigations, and their generalizability to real life organizational interactions is questionable. If nothing else, this brief review should indicate that an overwhelming number of questions about interpersonal communication in organizations are unanswered.

Much of the theoretical work is associated with attitude change. "The concept of attitude, as presently interpreted, is not too useful for the study of information processing. The concept is non-situational. It is intended as an estimate of value for a single object across situations. Therefore, it does not tell us much of the value of an object in a given orientation situation.." (Carter, 1965, p. 205)." No adequate models, or even focused roadmaps, exist to direct the researcher who wants to test hypotheses concerned with how information is processed in organizations. Enterprising theorists might be able to extend the models of dyadic communication to include variables which cannot be ignored in organizational settings. Such variables include all the structural and environmental aspects of organizations, multiple communication linkages, the time frame of communication, and the fact that a person's rewards are often tied to his organizational communication interactions. It is to organizational settings and these variables that we now turn.

The Organizational Milieu

In this section we plan to examine specifically the organizational context of communication interactions. That is, we will keep sharply focused on the organizational factors that affect the structure, process and consequences of communication acts. Not all of the research we will cover in this section has been carried out in "real life" organizations; however, much of it has, and the remainder has direct implications for the flow and content of communications in such settings. (In order not to overlap too much with previous reviews, we will concentrate primarily on studies published in the last ten years.)

We will first review some of the fundamental characteristics of organizations as they impinge upon communication. Next, some general features of communication systems will be considered. This will be followed by several subsections dealing with specific features of organization structure as they relate to communication: the total organizational configuration, the vertical or hierarchical dimension, the lateral or horizontal dimension, and group structure.

The Nature of Organizations as Related to Communication

If one examines the definitions of organizations that are provided by various theorists (such as Barnard, Etzioni, Schein, and Simon, among others) there typically emerge some four or five characteristics that are deemed fundamental. Not every theorist includes all four or five, but most characteristics are mentioned in the majority of definitions. Each of these will be considered in turn, to see what kind of influence they may have on communication.

Social Composition. A basic feature of complex organizations, and one that

is a powerful determinant of the nature of communication within them, is that individuals do not work in isolation. Except in rare and unusual instances they are surrounded by other people from the moment they begin the working day to the time they leave. Furthermore, not only are they in the midst of a social milieu, they ordinarily are members of one or more formal or informal sub-units within the organization. The implications for communication revolve around the fact that individuals in organizations frequently are not only representing themselves when they send a message, but they also are serving, in some degree, as agents of some social or organizational unit. Likewise, intended receivers usually are not just "independent" individuals but rather are attached to groups or units that can be "reached" even when the apparent recipient is only one person. Additionally, of course, such reverberations occur beyond individual senders and receivers even when the communicator's intention is only to represent self or to communicate to a definite other person.

Since organizations are social entities and composed not just of individuals but also of groups of various types, this means that much of communication in organizations is of a group to group nature. Representatives from the personnel department meet with the production department; the finance committee reports to the board of directors; the X department provides data for the Y department; and so forth. While such group to group communication has not been studied to any extent compared to inter-individual communication, it nevertheless is a prominent characteristic of organization life and constitutes an area needing more research attention.

Goal Orientation: A second basic feature of organizations is that they attempt to be goal oriented. That is, they are ordinarily considered to be

purposeful in nature. Goals, as theorists note, can be considered simultaneously as both desired future states of affairs and as constraints. They are taken as an indication of where the organization (or, more literally, those who control its resources) wants to go and what it wants to achieve, as well as signifying the limitations on what it will consider as acceptable or desirable behavior. The presumption of most people that formal organizations have objectives or goals has a decided impact on the communications behavior of the members in them (as well as on the communications that flow into and out of organizations in their relationships with their environments). It will influence the pattern of communication networks in terms of the frequency and direction of flow of messages. It will also regulate to a degree, but not completely determine, the content of organizationally-relevant messages. On the other hand, the purposive nature of organizations is not likely to have as great an impact on the vast non-organizationally relevant "informal" communication that takes place in every organization. (There is, of course, much so-called informal communication that occurs which <u>is</u> "relevant" and which is affected by the presumption of the participants that the organization is purposeful.)

<u>Differential Functions</u>. If organizations have goals and objectives, however imprecisely and implicitly they may be stated and recognized, then they must embody means to attain them. One of these mechanisms is a third major characteristic of organizations: the differentiation of functions, or as commonly called, the division of labor. In formal organizations of any size, all individuals do <u>not</u> carry out the same functions. Organizations presumably set up divisions of labor so that there will be greater efficiency in

goal attainment by having each individual concentrate on a limited sphere of activities in which he has or can acquire some competence. In other words, the nature (limitations) of individuals and the nature (complexity) of tasks in organizations require division of labor if a product or service is to emerge. Such differentiation occurs along both horizontal lines -- by purpose or function to be performed -- and along vertical lines in terms of scope of responsibility.

The existence of differentiated functions in organizations directly affects communications by both making possible and limiting certain patterns of interactions, and by influencing the attitudes of individuals in different parts of organizations. The former kind of impact occurs because the parceling out of functions results in an increase in the frequency or likelihood of certain interactions and a decrease in the frequency or chance of other interactions. Thus, some communication patterns get firmly established with particular modes of operation that are difficult to disrupt even if individuals or organizations so desired. On the other hand, a particular implementation of differentiation will make it extremely difficult if not impossible for certain other patterns to originate let alone continue. The second impact of differentiated functions -- on the attitudes of communicators and recipients -- stems from the specific perspectives that individuals acquire because of the nature of the functions they are performing in the organization (e.g., Dearborn & Simon, 1958). This can facilitate communication among those performing similar functions and at the same time inhibit it across individuals from different functional areas.

Systems of Coordination: The other major mechanism that organizations employ to facilitate goal achievement constitutes a fourth key characteristic

of organizations: systems of rational coordination. Such systems -- e.g., plans, rules, role prescriptions, etc. -- are made necessary by the existence of differentiation of function, and they permit the organization to gain the advantages of specialization without at the same time generating such unfocused activity that nothing of a coherent nature is accomplished. In considering the organization's attempt at rational coordination it is well to keep in mind that, as Schein (1970) stresses, it is activities not people that are coordinated. These activities cannot be coordinated without communication among the parts of the organization. Therefore, organizations not only encourage but seek out certain types and frequencies of communication so that such integration can be achieved.

Continuity Through Time: One final characteristic of organizations has a strong influence on communication: continuity through time. This feature of organizations is one of the key factors distinguishing them from other types of social entities, such as audiences, parties, or casual crowds. It critically affects communication in organizations because it gives individuals an awareness that their activities and interactions are likely to be repeated (though not precisely identically) in the future. Such an awareness can be presumed to affect greatly the types of communications that individuals or groups send and the interpretations put on them by receivers. Some messages will not be sent because of the anticipated future. Others will be sent precisely because the sender does anticipate a certain kind of future. Still others will be altered to take into account in some way the fact that the organization is to continue. It is this feature of organizations -- their tendency toward continuity -- that makes it exceedingly difficult and haz-

ardous to extrapolate the results of laboratory-type studies of communication to actual, ongoing organizations. Such a feature is difficult to insert into the typical laboratory study yet it is a pervasive part of the life of the typical organization that employes people.

The Nature of Communication Systems as They Relate to Organizations

Structural Aspects: Whatever limitations laboratory studies of communication networks in small groups may have for generalizing specific findings to real-life complex organizations, taken as a group they provide a source of ideas concerning the nature of the structural aspects of communication systems in organizations. These studies have been well summarized by Shaw (1964), and this source should be referred to for greater detail.

Basically, the network studies focus our attention on the dimension of centralization-decentralization in communication structures. In the centralized structure, there is a high concentration of information-obtaining potential in one or a limited number of positions in the structure, with a corresponding low potential spread among the majority of positions. Positions with a high potential are said to have a high degree of cummunication "independence" (Leavitt, 1951; Shaw, 1954; Shaw, 1964), while the other positions possess little or no such independence. In decentralized communication structures, the information-obtaining potential is more-or-less evenly spread among all of the positions, and thus the independence of each position is roughly equal. Findings from network studies generally indicate that centralized structures are more efficient when the problems or issues to be dealt with are relatively simple and straight-forward; however, such structures seem to be less efficient than decentralized ones for more complex problems and tasks,

and in addition they tend to generate lower morale and satisfaction (Shaw, 1964). (Other aspects and findings of some of the network studies will be discussed at a later section in this chapter.) Whether such generalizations concerning the structure of communication systems will be supported when we have data from ongoing, complex organizations rather than from small groups in laboratories remains to be seen. In any event, the centralization-decentralization dimension appears to be a key aspect of communication systems that must be considered in any analysis of the impact of organization structure.

Other structural features that will need to be subjected to empirical examination in a systematic fashion include the size of the structure, the heterogeneity/homogenity of the types of positions within the structure, the number and types of channels available throughout the structure, and the geographical and positional distances to be covered. (Again, some aspects of these structural factors will be covered in more detail below to the extent that they are investigated in particular studies.)

Still another way to look at the structural features of communication systems in organizations is to consider the communication roles that various positions can perform. Essentially, these amount to four types: initiator, relayer, terminator and isolate. (Davis, 1953b; Sutton & Porter, 1968). That is, some positions typically initiate communications much more often than they either receive or pass on communications. This does not necessarily mean that they do it often, but only that they initiate relatively more than they receive or pass on. Other positions function as relays that seldom start or finish the communication process but rather receive and pass on messages. Positions with a different kind of reception pattern (e.g., many rank-

and-file positions) are those which only receive but seldom relay information. And, finally, there are those positions that are relatively isolated from the normal communication channels and hence have a low frequency of either initiation or reception. While there has been some investigation of this way of looking at the structural aspects of communication systems for informal or "grapevine" communications (Davis, 1953b; Sutton & Porter, 1968), there has as yet been relatively little application to more formal organization communication networks. Yet, it would seem that this categorization of communication roles could be a set of useful structural distinctions that would aid in analysis.

Information-processing aspects: A somewhat different way of viewing fundamental properties of communication systems as they relate to organizations is to focus on how information is processed by positions within the structure. Recently, Ference (1970), drawing upon the work of March and Simon (1958), developed a number of propositions that bear on this approach as it relates to decision-making and problem-solving within an organization context. While most of his propositions are most pertinent to the problem-solving process per se, a number of them are directly relevant to the information-processing characteristics of communication systems and provide a fruitful basis for conceptualization. A sample of several of these propositions -- and it must be remembered they are just that and not summaries of empirically validated conclusions -- are presented below (Ference, 1970, pp. B84-86):

> .. "When information is evaluated and integrated at a position in a communications network, only the decision or inferences

drawn from the information are transmitted; the information or evidence leading to the decision or inferences is not transmitted."

.. "When information is evaluated and integrated, the function of the person doing the processing will exert more influence than his personal motivation on the choice and interpretation of information." [Note the relevance of this proposition to our earlier discussion of the "differentiated functions" characteristic of organizations.]

.. "Information, once evaluated and integrated, will tend to fit the transmitter's perceptions of the recipient's needs."

.. "To the extent that influence is differentially distributed among the members of an organization, the susceptibility of information to alteration will vary directly with the influence of the source providing the information."

.. "Information indicating success in the pursuit of overall goals will be altered less than equally reliable information indicating failure."

.. "To the extent that problems are ill defined, information obtained through informal communication systems will be preferred to information obtained through formal communication systems."

Taken together, Ference's propositions emphasize the information evaluation and the information transmittal roles of positions in the structure. The propositions thus provide a potentially helpful basis for analyzing some of the diverse empirical findings that have been otained from the actual communication behavior of participants in organizational settings.

The Total Organizational Configuration

The total configuration of an organization undoubtedly exerts a strong influence on the characteristics of communication within it. (Wilensky, 1967, for example, provides some interesting and illustrative case examples of such influence.) However, we have a considerable gap in our research knowledge about the possible impacts of major dimensions of the total organization. That is, most investigations have been devoted to more limited aspects of the organization, such as superior-subordinate relationships or properties of groups as they affect communication. Seldom have studies dealt with the effects

on communication of the overall size or shape of the total organization, or the predominant technology utilized by the organization. Nevertheless, it may be useful to comment briefly on a few of the possible variables connected with the total organizational configuration:

Institutional Differences: A fruitful but unexplored area for research is the comparative differences in communication patterns and practices across organizations operating in different institutional arenas. For example, are the communication problems encountered in public elementary schools similar to those found in governmental agencies? Is the relative rate of upward to downward communication in a manufacturing plant different from that of a comparable-sized hospital? Such questions will be difficult to answer because of the confounding effects of a number of uncontrolled variables, but even exploratory attempts to investigate comparative institutional communication patterns should contribute to basic organizational theory.

Technological Effects: Recent research (e.g., Woodward, 1965; Lawrence and Lorsch, 1967) has demonstrated the influence of technology on various aspects of organizational behavior. However, with respect to communication we have relatively little sound information on the impact of technology. This is true even in the area of information technology, such as the introduction of electronic data processing. Despite the growing influence of such technological developments (Whisler, 1970a, 1970b), their effects on communication behavior have not as yet been documented in any systematic way.

Perhaps the only empirical study bearing directly on technological influences on communication was one by Simpson (1959) that was carried out in a textile mill. Although the study did not make comparisons of different

types of technology, the findings from this setting led Simpson to believe that the degree of mechanization might have an effect on the rate of vertical communication. On the basis of his results, he hypothesized that: "Mechanization reduces the need for close supervision (vertical communication), since instead of the foreman the machines set the work pace of his subordinates; but automation (i.e., extreme mechanization) increases the need for vertical communication to deal with the frequent and serious machine breakdowns" (1959, p. 196). As yet, such a hypothesis remains to be tested, since, as noted, virtually no research has been carried out on the effects of different types and degrees of technology on the nature of organizational communication. As with the possible impact of different institutional realms, comparative research is needed in the area of technology.

Size Effects: Outside of laboratory settings, where extremely small (and isolated) groups of three to six persons have been studied, the variable of size of organization has been relatively unresearched with respect to its relationships to organizational communication. This is so despite the fact that most observers commonly believe that greater size has deleterious effects on the quality of such communication. This is a presumption that has not yet been proved by carefully documented research. One unpublished study (Donald, 1959, cited in Guetzkow, 1965) that provided some evidence concerning size was conducted on units of the League of Women Voters, where it was found that rates of communication upward from members to League officers decreased with increases in size of unit, but rates of communication among rank-and-file members were unaffected by size. This type of study remains to be replicated, and the results to be generalized, to other types of organizations and other ranges of

unit and total organization size. In contrast to some other dimensions of the total organizational configuration, however, size should be one of the more easily researched variables.

Shape: Not only are the total sizes of organizations and units within them presumed to affect communications, but also their shape in terms of tallness vs. flatness. While no explicit research on shape has been carried out with respect to communication effects, other research (e.g., Porter and Lawler, 1964; Porter and Siegel, 1965) on shape indicates that it does have systematic relationships to other dependent type variables such as job satisfaction. It might be hypothesized, for example, that tall organizations maximize communication difficulties across more than two organizational levels but minimize difficulties between two levels (because of the relatively small numbers of subordinates reporting to a given superior in a tall structure.)

Control (Authority) Structures: Another crucial dimension that distinguishes different types of organizations is their pattern of formal authority and controls. Theorists have posited various categorization systems -- e.g., Etzioni's (1961) tripartite compliance relations scheme of normative, utilitarian, and coercive -- with reference to the control features of organizations, and these are presumed to interact with the quantity of communication. Although research evidence is again sketchy, Julian (1966) has provided data from five hospitals suggestive that there are more "blocks" to communication in normative-coercive hospitals than in purely normative ones. Furthermore, the blockages appeared to operate with respect to both upward as well as downward communication. [The conclusions of this particular study must, however, be regarded as quite tentative, inasmuch as the data classifying hospitals

as either normative-coercive or normative were obtained from the same source (patients) as were the data indicating the extent of blockages.] In a rather intricate set of findings obtained on a sample of League of Women Voters units (the same sample as in Donald's study referred to previously), Smith and Brown (1964) indicate that the type of control structure -- both the amount and the nature -- interacts in complex ways with the prevailing communication patterns to determine organizational effectiveness and member loyalty. The study appears to show that control patterns in terms of who is influential in decision-making has closer relationships to efficiency while communication patterns interrelate more with amount of member loyalty. In any event, the findings from both the Julian and the Smith and Brown investigations are too tenuous to draw firm conclusions. They do, though, point the way toward the need for, and the probable importance of, empirical data on how communications are affected by control structures and how both sets of variables interact to determine organizational performance and individual behavior.

The Vertical Dimension (Hierarchical Effects)

The Role of Status and Power: Any analysis of the vertical dimension of communication in organizations must begin with a consideration of the variables that differentiate individuals holding higher positions from those holding lower positions. The theoretical and empirical literature has focused on two key variables in this respect: status and power. Following Cohen (1958) we can consider status to be "the amount of desirability and satisfaction inherent in a given position," and power to be "the relative ability to control one's own and others' need satisfaction" (pp. 41-42). In general, we can

assume that individuals holding higher-ranking positions in organizations will possess both greater status and greater power. However, there clearly can be exceptions to this generalization -- particularly with respect to power -- in specific organizational situations: sometimes high level positions have relatively little status attached to them (particularly when they are perceived as powerless positions), and frequently holders of high level positions will find themselves with relatively small amounts of legitimate power. So, although high rank, status and formal power tend to be associated, there is no intrinsic reason for this to be so in all instances. The basic issue is the question of how the two factors of status and power interact to affect upward and downward communication in organizations.

A series of laboratory experiments by a variety of investigators, beginning with Kelley (1951) has attempted to isolate the impact of these two variables. One issue has concerned the effect of status and/or power on communications upward from low to high positions. As Cohen (1958) has pointed out, two explanations have been advanced to explain the communication behavior of "low" individuals. One explanation emphasizes status differences by utilizing the concept of "substitute upward locomotion." Cohen has labeled this the " 'status approximation' theory of upward communication" and describes it in the following terms: "On the assumption that there is a general drive to move upward in our society. ..one may expect group members to endeavor to move upward in the status hierarchy. Thus, low-status persons may have fantasies about occupying high-status positions and may strive to communicate with high-status persons as a substitute for actual locomotion when actual locomotion is not possible" (1958, p. 41). A different explanation focuses on the

power aspects of hierarchical relations, and has been termed an"' nstrumental' theory of upward communication." It has been described by Cohen as emphasizing "the uneasiness often felt by persons with low rank when interacting with those of high rank, because of the power high-ranking individuals possess, and the resultant attempt on the part of the 'lows' to have maximally beneficial relations with 'highs'" (p. 41).

Cohen's own laboratory experiment tended to show that status, when combined with power, affected upward communications considerably more than when power was absent. The amount of negative information sent upward was much less in the former condition than in the latter, tending to support the instrumental theory with its emphasis on the impact of power. Subsequent experimental research (Jones, et al., 1963; Watson, 1965; and Watson and Bromberg, 1965) has attempted to clarify further the role of power. Findings confirm the influence that differential power can have on the nature of communications activity and the content of messages. All of the studies support the conclusion that individuals in low power positions, when sending messages upward, do screen out certain types of information (e.g., disagreements with the opinions of the high power person) that would tend to bring unfavorable reactions from the individual who has some potential control over them. However, research also shows that individuals in positions with high power can screen out information for the low power recipient (Jones, et al., 1963).

The pervasive effects of both power and status differences are also demonstrated in field research. For example, Slobin, et al. (1968) found that in a business organization individuals in middle level positions were much more willing to communicate self disclosure information upward than they were

to divulge it downward to subordinate levels. This was interpreted by the authors as attempts to establish greater "intimacy" with high status/power individuals so that there would be more equality between the two levels, while attempting to maintain downward differences by avoiding self disclosures that would signify close personal relationships. Here again, one finds evidence for screening in both upward and downward communication. The content of what is screened, is, however, dependent on the direction of communications. The amount of information sent also appears to be affected by power and status differences. Barnlund and Harland (1963) and Allen and Cohen (1969) indicate that high status individuals communicate more with each other than with low status individuals, and that low status individuals are also more likely to attempt to communicate with high status persons than with other lower status persons.

Based upon the research -- both field and laboratory -- dealing with the effects of status and power on communication, it appears that these two variables jointly interact to produce modifications in the communicative activities of participants and the contents of their messages. It also appears, however, that power accounts for more of the variance in communication behavior than does status. The existence of differential power and status has been shown to lead to substantial screening and shaping of information on the part of both those low and those high in a hierarchical relationship. The exact nature of the filtering will depend on a number of specific aspects of a situation (see the research cited below on superior-subordinate interactions), but such behavior can be interpreted from a broadly instrumental perspective as attempt at self protection and self enhancement and gratification.

Communication Across More Than Two Organizational Levels: Most organizational studies of the hierarchical aspects of communication have focused on the nature of superior-subordinate interactions. However, a few investigations have examined vertical communication behavior across several different levels, and it may be worthwhile to look at these before turning to the interchanges between only two adjacent levels.

Davis (1953a) has developed a research method called "ecco analysis" that gathers information on where, from whom, and when an individual first received a piece of information and what he did with it. This approach has been used to study both informal or "grapevine" information and formal organizational information. With respect to informal kinds of information, both Davis (1953b) and Sutton and Porter (1968) have found that the higher an individual's position in the organizational hierarchy the more likely he is to know a specific piece of grapevine information. (One factor that tended to be common to both studies and which may limit the generalization of this finding is that items of information selected for study by the investigators generally were supplied by upper-level personnel.) Both studies also found that each time a grapevine item was circulated only a few individuals functioned as "liaisons" -- that is, both received and passed on the item. However, the studies differed in their results in terms of whether the same individuals always occupied the liaison role, Davis finding that they did not while the reverse was true in the Sutton and Porter investigation. Also, the two studies found opposite results concerning whether there was greater circulation of grapevine news within or between departments: Sutton and Porter found that the information tended to stay within a given department, while Davis

found the opposite. The Sutton and Porter sample of respondents, however, included a number of rank-and-file employees whereas the Davis sample was only managerial, and this fact could account for the different results concerning this particular finding.

In a study of downward communication of formal information, carried out among managerial levels of two departments of a manufacturing company, Davis (1968) found extensive filtering of routine, non-task information by middle levels. On the other hand, task-type information was relatively well communicated from the top down to the lowest management levels.

The existence of so few studies that investigate communication across a number of hierarchical levels severely limits any generalizations concerning vertical communication. However, the available findings suggest that (1) individuals are influenced by the nature of the contents of the information they receive as to whether or not they will decide to pass it on -- this is true for both informal and formal information; (2) certain individuals probably have a much greater propensity for wanting to serve as key communication links than do other individuals, thus indicating that personality factors may play an important role in the quality and quantity of such communication; and (3) organizational structural factors -- particularly the grouping of individuals into horizontal levels and into departments that cut vertically across levels -- help determine where and to whom information is communicated.

Superior-Subordinate Communication: As already noted, interactions of individuals in direct superior-subordinate relationships to each other have been the chief focus of research efforts investigating the vertical dimension of communication in organizational settings. Such research has provided data

on the amount of this type of communication activity, the accuracy of this communication, and the nature of the reactions of individuals involved in the interactions.

Estimates of the amount of vertical communication activity of individuals in organizations have utilized both "percentage of time" and "percentage of interactions." Several studies (Dubin & Spray, 1964; Kelly, 1964; and Lawler, Porter & Tenenbaum, 1968) generally find that for managers, about two-thirds of their communication time is spent with superiors and subordinates, and about one-third is spent on lateral or horizontal communication. (An apparent exception to this general finding is provided by Wickesberg, 1968; his data showed that a sample of managers reported spending only about one-third of their time in vertical communication, but another one-third of the total time was reported spent on "diagonal" interactions which can be assumed to have a vertical -- though not superior-subordinate -- component.) The available data indicate, therefore, that a majority of communication activity among managers in formal organizational settings is vertical, and that it is more prevalent than horizontal communication. However, if samples were limited strictly to rank-and-file employees rather than managers, the reverse proportions of vertical to horizontal might well be found. In any event, it appears that the attention that researchers have paid to superior-subordinate communication is well founded due to both its importance and its pervasiveness.

The perceived effectiveness or quality of communication between superiors and subordinates in relation to their degree of cognitive similarity about common objects in the environment was investigated in an early study by Triandis (1959). The findings, also replicated by him in a laboratory study

(Triandis, 1960a) showed that such similarity in the thinking of superior-subordinate pairs was related to communication effectiveness. However, the study does not suggest how such cognitive similarity between individuals can be developed, whether it can be easily altered, and whether it has other possible positive or negative consequences in the work situation. (Perhaps, for example, too much similarity dampens tendencies toward creative solutions to problems.) Also, although the finding is intriguing, research related to it should probably be carried out under a broader set of field conditions before its generality is confirmed.

The accuracy of communication between superiors and subordinates has been investigated in a series of studies by Maier and his associates (Maier, Hoffman, Hooven, and Read, 1961; Read, 1962; and Maier, Hoffman, and Read, 1963). This research shows again that both the types of material being communicated and the characteristics of the communicators have a strong effect on perceived accuracy. One of the studies (Maier, et al., 1961) found that accuracy was much higher for communications dealing with job duties than for those pertaining to job problems. Communications about job requirements and future job changes were intermediate in the degree of perceived accuracy. These results would indicate that the more tangible and objective the subject matter of the communication, the more likely it is that subordinates and their superiors will feel that they are communicating accurately, whereas when the messages involve more subjective opinions and feelings there is greater doubt about accuracy. In his study of upward communication, Read (1962) found that the degree of agreement concerning the subordinate's problems was least when the subordinate held strong upward mobility aspirations and when he lacked trust

in his superior. Even when trust was present, the existence of high subordinate aspirations tended to result in lack of boss-subordinate agreement, indicating the importance of this particular variable. (The findings concerning the effect of potential mobility in Read's study reinforce similar findings of Cohen's earlier study [1958] carried out with a quite different methodology in a laboratory situation). A potential modifying variable -- greater knowledge of the subordinate's position by virtue of the superior having previously occupied it -- was found not to affect the overall difficulty of superiors and subordinates in reaching agreement via communications as to the nature of the subordinate's job problems (Maier, Hoffman, & Read, 1963).

Another aspect of accuracy relates to agreement between superiors and subordinates with respect to how much communication activity there is between them. Intensive interview data collected by Webber (1970) on 34 pairs of superiors and subordinates show that in each role, whether superior or subordinate, a manager believes he initiates communications more often than does the other person in his pair. However, this tendency is significantly greater in downward than in upward communication. In other words, there tends to be a large discrepancy between the boss and his subordinate in how much the former communicates to the latter -- the superior perceiving the amount to be much greater than does his underling. This difference is heightened if the subordinate tends to have an "active personality" (as measured by behavior in a standardized mild stress interview), lending further support to the notion that problems of communication between two adjacent hierarchy levels are most likely to occur when the subordinate is forceful, agressive and has strong upward aspirations. Although there is little or no available evidence yet to

support a reciprocal interaction, it could be hypothesized that such difficulties would be enhanced even further the less the general self confidence of the superior.

The quality and adequacy of communication between any pair of individuals not only involve questions of accuracy but also of the nature of the feelings and reactions that are felt by the recipient. Such attitudinal reactions to superior-subordinate interactions were investigated in a study of some 100 managers (about half of whom came from a manufacturing company and half from social service agencies) by Lawler, Porter, and Tenenbaum (1968). To collect their data, they utilized a modified version of a self-recording form developed by Burns (1954). As used in Burns' original study, the form asked the manager to supply factual information about each interaction episode, such as who initiated the interaction, how long it was, etc. (A separate form was completed for each episode.) In the Lawler, Porter and Tenenbaum study, the major modification included the addition of five attitude scales on which the manager was to record his reaction to each episode. Forms were completed by each member of the sample for five consecutive working days (the average number of forms per manager across the five days was approximately 40). As might be expected, managers felt more positive about interactions they initiated than they did about those initiated for them. The most interesting aspect of the data, however, concerned the differential reactions a manager had to interactions that were upward toward the boss compared to those downward with a subordinate (Table 1): "A signficant majority of the managers reported more favorable attitudes toward the contacts they had with their

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Insert Table 1 About here

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superiors than the contacts they had with their subordinates. Overall, this tendency appears to hold for both samples and for all of the attitudes studied (p. 437)". The authors assume that this finding can be explained by the fact that "...a superior contact is relatively more 'unusual' than a subordinate contact. In addition the superior has reward power over his subordinates. Thus, a superior-subordinate interaction is likely to be a more significant event for a subordinate than for a superior" (P. 438). The implication of this, as the researchers pointed out, is that managers may not be placing high enough value on the communications they receive from subordinates, thereby creating conditions that can act to discourage effective upward communication.

The general pattern of findings reported above was replicated in a later study by Tenenbaum (1970), who focused on communications between dyadic superior-subordinate pairs of managers. Tenenbaum found subordinates evaluating their self-initiated interactions with superiors much more highly than did the superiors who "received" the subordinate communications; when superiors initiated a communication downward, both sender (superior) and receiver (subordinate) evaluated the episode about equally favorably. This pattern of results indicates again that subordinates feel they must take seriously the communication interactions they have with the boss, but the boss does not have to reciprocate the same degree of attentiveness and favorable reaction. Tenenbaum's study extended the earlier Lawler, Porter and Tenenbaum findings by also investigating perceptions of the degree of attitude change that each party experienced and felt the other party experienced. His results showed clearly that subordinates report greater attitude change than do their

superiors in mutual interactions. Furthermore, each party tends to overestimate the amount of opinion change actually reported by the other party. Overall, Tenenbaum's data again point up the inherent obstacles in achieving effective communication between managers at a given hierarchical level who have a certain amount of formal status and power -- particularly reward power -- and their subordinates who have less of these perquisites of rank.

The Lateral Dimension

The relative importance of the lateral or horizontal dimension in organizational communication has been emphasized by several writers (e.g., Simpson, 1959; Landsberger, 1961; Strauss, 1962; Dubin & Spray, 1964; Wickesberg, 1968; Hage, Aiken, & Marrett, 1971). At the same time, they point to the virtual neglect that this aspect of communication has received in the textbook and research literature on organizations.

The amount of time spent in lateral communication varies widely by the level and function of the individual, but evidence from several studies (those cited previously in estimating the time spent in vertical communication) indicates an average (with a large standard deviation) of about 30-40%. While this is somewhat less than the proportion spent in vertical communication, it still represents a substantial volume of horizontal-type interactions. Indeed, given this degree of time spent in such communication and given its general lack of attention by organization theorists, Dubin and Spray go so far as to say that "... there can be absolutely no question of the need for substantial revision of extant organizational theory" (1964, p. 106). The implication is that organization theory should give more attention to horizontal

relationships than has been the case in the past.

As Porter (in press) has noted elsewhere, "the horizontal [communication] dimension is made up of at least several major types of communication interactions: (1) those occuring among peers within work groups, (2) those occuring across major units within the organization, and (3) those occuring between line and staff types of positions". While all of these types share some features in common -- e.g., the general absence of formal status and power differences between communicators -- each also has its own distinctive features.

Lateral communication among peers within work groups is undoubtedly the most prevalent type of horizontal communication -- particularly informal communication -- within organizations. In fact, the opportunity to engage in this type of interaction is often cited by operative employees as one of the chief (and, in certain organizations almost the only) sources of satisfaction on the job. While there has been relatively little research directed specifically at identifying the factors that facilitate or inhibit this kind of communication, there is a considerable body of research data on group size that appears to be relevant. In their review of studies of group size in industrial organizations, Porter and Lawler (1965) conclude that "the literature on subunit size shows that when blue-collar workers are considered, small size subunits are characterized by higher job satisfaction, lower absence rates, lower turnover rates, and fewer labor disputes" (p. 39). This cluster of findings would seem to point to an inference that satisfying (from the point of view of the participants) communication among peers in workgroups would probably be facilitated by keeping the size of the groups as small as

possible (as long as it is above some theoretical minimum, such as four or five, which appears to be necessary for the individual to feel that he is in a group at all).

With respect to the use of communication among peers for decision making and problem solving within groups, Hare (1962) summarizes the findings from small group research by stating that with increasing size "groups use more mechancial methods of introducing information, are less sensitive in their exploration of differing points of view, and make more direct attempts to reach a solution whether or not all group members agree" (p. 244).
Of course, it must be noted that in some specific instances organizations may be desirous of holding down the volume of peer-peer communication in order to reduce "distractions". In such cases, large group size coupled with physical or geographical obstacles to easy contact might be advantageous from the organization's point of view. Whether it would be an advantage to have the peer-peer flow of communications reduced would depend, of course, upon what types of communications are hindered and what types will get through in any event. (Note: further aspects of communication within groups will be discussed in the next sub-section.)

The second type of within-level communication in organizations involves interactions between members of different units. Recent research by Hage, Aiken, and Marrett (1971) suggests that the amount of such communication is affected by the structure of the organization, with a more differentiated and decentralized structure appearing to generate a higher volume of inter-departmental communication -- as might be expected. Most of the research in this area of lateral communication has, however, focused on the problem of

interdepartmental conflicts and rivalries (e.g., Dalton, 1959; Landsberger, 1961; Strauss, 1962; Dutton and Walton, 1965). As Porter (in press) suggests, "the primary issue has been one of how the individual member of one department, who has loyalty to that department and whose immediate fate is bound in with its success or failure, is able to interact effectively with a member from another department who has similar loyalties and feelings toward his own work unit." Some investigators attribute much of the conflict that does arise to individual personality and motivational factors; others, such as Landsberger (1961), emphasize the inherent potential for conflict in the basic work flow with its differentiation of functions that create a subunit orientation rather than an organizational perspective. Proposed remedies for dealing with this kind of conflict are beyond the scope of this chapter, but it is clear that we need a good deal more in the way of systematic data collection before we can pinpoint with any confidence the generalized communication characteristics of these types of interactions.

Line-staff interactions constitute the third major variety of lateral communication behavior in organizations. Here again, as with cross-departmental communication, the potential for conflict is prevalent (Dalton, 1950). However, there is an additional element present in line-staff communication: the generally greater organizational and geographical mobility of staff personnel. Several studies (Davis, 1953b; Burns, 1954; Zajonc and Wolfe, 1966) are in agreement that staff employees have, as Zajonc and Wolfe put it, "wider formal communication contacts than line employees" (p. 148). Members of the staff complement of organizations appear to engage more often in communication activity and to have a better knowledge of events transpiring in the organization.

Thus, while the formal power and even status of staff employees may be less than that of comparable level line members, their greater participation in communication provides them with a source of de facto power in dealing with the line.

The Group Dimension: Communication within Sub-Units

We have already noted above that peer-peer communication appears to be strongly influenced by the size of the group, with increases in size apparently acting to inhibit the quality and quantity of communication. We now turn to other structural aspects of groups as they affect communication, with particular focus on the results and implications of laboratory studies of small group networks. Findings from the first fifteen years of such research have been well summarized in a major review article by Shaw (1964), and we shall briefly review these (See Table 2). We also will consider some later findings that seem to shed additional light on the communication process within groups. However, in viewing all of the communication network research in total we are forced to agree with Collins and Ravens' (1969) assessment that "it is almost impossible to make a single generalization about any variable without finding at least one study to contradict the generalization"! (p. 147).

Research on communication under controlled conditions in small groups dates back to the pioneering work of Bavelas (Bavelas & Barrett, 1951) and Leavitt (1951). As mentioned previously, the focus was on the comparison of centralized (wheel) with decentralized (circle or completely connected [com-con]) networks. The effects of these different structures have been studied with relation to group performance (usually "problem solving") and the satisfaction of various members of the group. The results from the early studies are

summarized succinctly in the accompanying table from Shaw (1964, p. 123). It

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Insert Table 2 About Here

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can be seen that the wheel or centralized networks were superior on effectiveness in dealing with so-called "simple" problems, whereas the decentralized networks were more effective than the centralized ones on more complex problems. The average satisfaction of members was generally better in the decentralized circle and com-con networks.

Shaw utilizes two basic concepts to account for most of the observed effects. One factor is "independence," which refers to the "answer-getting potential" of positions in the network. In a centralized wheel-type network, the central individual would have high independence because all information is channeled to him, while the other members would have low independence due to their lack of "answer-getting potential." In a decentralized network, all members start with relatively equal independence, since there is no structurally imposed central position, but differential independence may develop as the group begins communicating and works out its own emerging structure which could resemble that of a centralized network. Such differences in relative independence-dependence between one person and others within groups can help to account for the differences in the satisfaction of various members. The other factor that Shaw invokes for analysis is "saturation," which refers to the "total requirements placed upon an individual in a given position in the network." Such saturation varies with both communication demands -- where there can be both channel overload and message overload -- and task demands (e.g., problem solution responsibilities). Clearly, if a central position

experiences extreme saturation then the task performance in a centralized network is likely to decrease; in contrast, saturation of a given position in a decentralized network should not have as severe effects since the overload on one position can be re-distributed to other positions. This factor, then, is presumed to account for the relative effectiveness of one or the other type of network in relation the nature of the problem task faced by the group, with the efficiency of the centralized group decreasing as the tasks become more complex.

With one exception, research on small group networks since Shaw's 1964 review have not materially altered his basic conclusions. The subsequent research has, however, further refined some of the earlier conclusions. For example, Lawson (1964) and Burgess (1968, 1969) have shown that reinforcement contingencies can have an important effect on group performance via communication, especially for initially decentralized networks. It appears from their work and the previous work of Guetzkow (Guetzkow & Simon, 1955) that once decentralized groups proceed to organize themselves (often along the lines of a wheel network) they communicate in much the same manner as do centralized groups and with about as much speed. Burgess in particular argues that motivational impacts will not become apparent until a group is allowed to reach a steady state.

The major exception to the statement that research subsequent to Shaw's review has not altered the basic conclusions learned relatively early from network studies is provided by a study of small communication groups embedded in larger groups (Cohen, Robinson, & Edwards, 1969). These researchers rightly point out that almost all previous network investigations have been carried

out on groups in isolation -- that is, where they were not functioning as if they were also parts of larger groups, which would be a much more realistic set of conditions if one wishes to generalize to organizations. Cohen et al. set up a rather complex experimental design in which they formed 11-member "organizations," with each such organization being composed of three five man groups with overlapping membership (See Table 3). Within the various five-

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Insert Table 3 About Here

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member sub-group combinations within the 11-member organizations, different communication networks were prescribed to represent typical centralized and decentralized structures. An important additional feature of the design, however, was that members of a given five-man group were free to interact about non-problem topics with members of the other two groups in their organization. This was done to "approximate better the richness and complexity of larger, actual organizations."

The findings of the study showed that the embededness of groups within larger "organizations" had a decided impact on the communication behavior of members. For example, individuals in wheel networks in their own groups tended to want to communicate much more with members of other groups than did members of decentralized groups, thereby "subverting" the internally-oriented centralized system. Such behavior apparently contributed to the overall lower performance of organizations containing more centralized groups. Data on attitudes and feelings showed a more complex pattern than the typical network studies of isolated groups, indicating that such subjective responses are not

only a function of one's position in his immediate group but also are a function of the individual's relationship to members of other groups within the same organization. It is also interesting to note in this study that the differently structured organizations tended to develop similar types of problem-solving systems: almost all tended to develop centralized approaches.

This important study by Cohen et al. indicates that many of the conclusions drawn to date about communication in small groups have been vastly oversimplified because such groups were not studied as parts of larger entities. It appears that the major thrust of future research on communication within small groups, particularly in controlled laboratory settings, should be in the direction of determining how these groups operate when part of larger structures. At the present point of time, we are only at the barest beginnings of this task. Perhaps the "embededness" direction of network studies will bring together both laboratory and field setting approaches to studying communication much more than has been true to date.

Some Methodological Considerations

Crucial to the evaluation and utilization of the evidence derived from studies relating to communication in organizations -- particularly field-type investigations -- is a concern for the methods by which the data were obtained. Hence, in this section we shall examine some of the methodological features of studies that have gathered data from "real-life" organizational situations and will propose some methodological directions for future studies. We are confining consideration only to the field studies from the organizational milieu because methodological aspects of other relevant types of studies have been dealt with elsewhere. (See McGuire (1969) for comments on many of the attitude change studies cited in our section on the interpersonal milieu, and Shaw (1964) for an extended discussion of laboratory network investigations.)

We have attempted to summarize in Table 4 the basic features of 22 of the more important communication field studies. (Consideration is given only to those studies that systematically collected and reported data; we are assuming that the 22 studies represent the bulk of such research reported prior to 1972.) If one first looks at the type of organizations that have served as a locus for communication research, it can be seen that there is a great pre-

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Insert Table 4 about here

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ponderance of manufacturing, industrial, and business firms. In only five studies (Hage, et al., 1971; Jones, et al., 1963; Julian, 1966; Smith and Brown, 1964; Sutton and Porter, 1968) are the majority of subjects from other types of organizations such as government agencies or hospitals. Clearly, only a quite

limited variety of types of organizations have been sampled.

Roughly half of the studies drew samples of subjects from only a single organization. However, even among the remaining studies that drew samples from several organizations, the analyses often did not utilize comparisons across organizations. That is, such studies (e.g., Dubin & Spray, 1964) typically drew a few individuals from a number of different organizations, but no attempt was made to analyze the data by types of organizations or characteristics of organizations. Thus, a reasonable conclusion is that the research to date that has been carried out in organizational settings has generally not contributed to our understanding of how the communication process functions in relation to specified organizational conditions. To take a simple example, we have little or no knowledge of whether communication in organizations that could be characterized as Theory Y or participatative differs in fundamental ways -- e.g., utilization of different types of channels, structuring in distinctive patterns, etc. -- from communication in Theory X or more autocratic organizations. Or, as another example, do organizations that contain many different functional specializations actually exhibit different communication characteristics than organizations that encompass (per a given size of unit) far fewer specializations?

If we now switch our attention to examining the types of subjects involved in the field communication studies, we find, again, a preponderance of only one type. In this case, it is managers or professional personnel (such as scientific researchers). Only three of the studies utilized rank and file workers and only four included clerical personnel. In contrast, 19 of the 22 studies focused on, or included, managers and professionals. Quite obviously, communi-

cation researchers have researched the more verbally skilled and more highly educated parts of the labor force, but have tended to ignore the vast bulk of employees in non-managerial and non-professional jobs. Given this state of affairs, it should make us extremely cautious in generalizing the findings of the studies considered as a whole. A further note of caution can also be found in the fact that most of the studies collected data from relatively small samples -- only six of the studies involved more than 100 Ss. Or, to put this another way, with the exception of a single and somewhat unique study (Smith and Brown, 1964) (utilizing a non-employee sample), our entire knowledge about how employees behave in terms of communicating in organizational settings is based on a total of fewer than 1,500 individuals! If one contrasts this situation with, say, the total numbers of subjects that have been involved in motivation, job satisfaction, or leadership/supervision studies over the years, he can begin to appreciate the extreme thinness of our data base for drawing conclusions about communication in organizations.

The situation with respect to the use of different types of data collection methods is somewhat better than might be expected. As is illustrated in Table 4, some six different methods for gathering data have been utilized in the 22 studies. Rather surprisingly, -- given their widespread use in many other areas of industrial/organizational psychology -- typical attitude questionnaires have been the primary technique for data collection in only three of the investigations. More widely used have been interviews (eight studies) and self-recording forms (seven studies). Also used have been "ecco analysis" (see the discussion of Davis, 1953a, in the preceding section), observation, and sociometrics. Taken as a whole, the studies show a rather

commendable use of a variety of methods for obtaining data concerning communication.

The type of data collected in each field study can be classified as either "factual" (e.g., "how many times a week do you communicate with your superior?") or "attitudinal" (e.g., "how do you feel about the frequency with which your superior communicates with you?"). Using this two-way breakdown, we see from Table 4 that some 17 of the 22 studies collected at least some factual type of information about communication. Thus, the data base available from field studies is not wholly or even primarily "merely" attitudinal in character.

Somewhat more discouraging, however, is the fact that in approximately half of the studies all of the data collected came from the same source. That is, there were no checks or comparisons possible between two independent sources (i.e., sets of respondents) with respect to a given finding. Thus, many of the studies reported in the literature are subject to the possibility of contamination of the results due to the fact that only intra-subject variations contributed to any comparisons that were made.

Finally, with respect to the studies included in our survey of the more prominent field investigations, only five of them stated explicit hypotheses in advance of data collection. The others can be regarded primarily as "exploratory" studies. Such a state of affairs perhaps attests as much to the condition of our conceptual understanding of communication in organizations as it does to the methodological elegance (or lack thereof) of the studies. Furthermore, even granting the exploratory nature of most of the studies, only slightly more than half of the investigations proceeded to test their find-

ings for statistical significance. This fact, coupled with the earlier observation that many of the studies focused on intra-subject rather than inter-subject comparisons, again argues for the rather modest state of our knowledge that has been obtained from studies of communication in on-going organizations. Restated, for the potential consumer of the findings from such studies the principle of caveat emptor surely applies.

Let us now, however, turn from a review of what has been done, methodologically speaking, to a consideration of what might be carried out in the future. Space does not permit a lengthy discussion, so we will only briefly list several of the issues we think need to be addressed if the overall methodological picture regarding these types of studies is to be improved:

(1) More inclusive samples from organizations: In most of the field studies reported to date in the literature, only a limited portion or set of employees in an organization is involved in the data collection process. Thus for example, only a scattering of one or two employees of several different units, or only the members of an R and D lab, or only a given set of superiors and subordinates, are sampled for communication data of one sort or another. Such limited samples obviously severely constrain the generalizations that can be made, even about a single organization. Also, the data thus collected may lead to misleading conclusions simply because many of the system features of the organization are ignored in terms of their impact on communication process and structure. (E.g., if the quality or frequency of communications between only two hierarchical levels are examined to determine how bosses communicate with subordinates, the potential influence of other levels on the process may be entirely missed.) Furthermore, and perhaps most importantly,

as we have noted previously the tendency to use only quite restricted sub-samples in organizations prevents many useful and potentially significant inter-organization comparisons. Therefore, it is our suggestion that more studies in the future should incorporate representative samples of organization members insofar as possible, so that conclusions about how organizations influence communication may be drawn.

(2) Simultaneous use of multiple methods of data collection: We earlier pointed out that across some 20 studies at least six different types of data collection methods had been utilized. However, what may not have been apparent is the fact that in almost every study only a single method was used. It would seem, therefore, that researchers in this area clearly need to heed the advice given some years ago by Campbell and Fiske (1959) to attempt to incorporate multi-trait, multi-method types of designs. This convergent-discriminant approach would seem to be an especially fruitful source of ideas for improved communication research. As just one example, there is no reason why several methods of data collection -- e.g., self recording, observation, and interviews -- could not be combined with an examination of several aspects of communication behavior -- such as quality, quantity, initiation/reception ratio, preference for channel use, etc. -- in order to approximate a multi-method, multi-trait approach. In this way it might be possible to obtain more substantial findings that would lend themselves to valid generalizations. In any event, the continued use of only single methods of data collection in communication studies seems like a rather hazardous procedure that could lead to some highly misleading conclusions.

(3) Longitudinal studies: Most communication field studies have been

cross-sectional in nature. However, several studies (e.g., Burns, 1954; Dubin & Spray, 1964; Lawler, Porter, & Tenenbaum, 1968) have collected data from a sample of subjects across a period of time, thus constituting a type of longitudinal study. Even in these studies, though, the time period has been relatively quite short -- usually on the order of two or three weeks. Also, in these studies, the data have not been analyzed in terms of their changes across time. Rather, the several days or weeks of data collection have been used to build a more substantial and reliable data base for certain comparisons. Thus, in virtually none of the field studies has a true longitudinal-type of research design been used to collect data relevant to communication. Consequently, it has not been possible to monitor changes in communication patterns across time, for example, or to determine the impact of specific kinds of organizational events on various aspects of communication behavior. While recognizing the inherent difficulties in collecting communication data in a truly longitudinal research design, we feel that this is a type of study that is badly needed in this area of research and that sooner or later significant contributions to our knowledge will be made by researchers employing this method. Some of the difficulties in conducting such a study can be eliminated or reduced by judicious selection of the particular features of the design. In other words, we are not talking about a single type of study, but rather about a category of studies that have in common a "time series" characteristic.

(4) Relation of communication variables to other types of variables: Conspicuously missing in almost all of the research we have encountered are data concerning the relationship of communication patterns and behavior to other organizational phenomena. In particular, the most glaring omission in

previous research are studies that relate communication characteristics to overall performance (individual or unit). At the simplest level, for example, we know nothing about how high performing employees differ in their communication behavior from low performers. Do they, for instance, communicate more or less with their own superiors? Do they have a higher rate of initiation? Do they tend to communicate about different content? Do they have quite different sets of linkages in the overall communication networks? Are they more likely to vary their use of channels? Could objective judges distinguish the quality of their communications from that of other employees? It would seem that in a field -- i.e., industrial/organizational psychology -- that has a heavy emphasis on performance, that studies of communication would frequently have attempted to relate such behavior to performance indices. Such has not been the case in the past, obviously, but we expect it to be in the future. It is too important a trend to be overlooked much longer.

(5) Interaction of field and laboratory studies: The area of research relating to communication has perhaps suffered a more schizoid separation of "laboratory" and "field" studies than almost any other area. One needs only to take a hasty glance at the literature to see how little impact the laboratory network studies have had on field investigators, and likewise how little the lab researchers have paid attention to any of the "real-life" findings. Better still, one can look at how communication is treated in textbooks dealing with organizations and management. Seldom will he find much real integration of the two types of studies. We feel that the continued separation of the two strands of research is probably not very helpful to the

development of the area. Indeed, we would argue that in the future considerable advance might be gained by the same researcher testing an idea both in the field and in the lab. (There has already been one worthy example of just this sort of joint field and lab combination in communication research: Triandis, 1959, 1960a) At the very least, it is an interesting intellectual challenge to attempt to specify the real-life analog of a laboratory communication finding and to devise ways of detecting it in ongoing organizations. Or, reversing the process, a finding obtained in an organizational setting could be put to a much more rigorous test in the controlled laboratory setting. The main point to be made here is simply that communication would seem to be a topic that is feasible to investigate in both the lab and the field and that some coordinated joint investigations in the two settings might produce some much needed insights regarding communication phenomena.

(6) Field experiments. One type of research design that has been relatively little used throughout industrial/organizational psychology has also not been employed with respect to communication -- namely, field experiments. However, it would appear that it would not be too difficult to design such experiments in this area. For example, one can think of interjecting certain communication changes (e.g., change of channel use, or less horizontal communications, etc.) in an experimental group and letting a control group continue in its normal communication patterns. Implementing the design for experimental field studies is always a problem, of course, but the potential benefits may make it worthwhile to attempt to overcome whatever difficulties are involved in setting up such a study. Designs of this type are, we predict, likely to become a part of the communication research picture in the near future.

Conclusions

We have already provided summaries at various points throughout this chapter. Hence, here we will limit ourselves to a few major conclusions:

(1) There exist no really comprehensive and adequate theories or conceptual systems pertaining to communication in organizational settings. Neither theorists writing about communication in general, nor theorists writing about organizations in general have provided the types of sets of interrelated propositions that would give meaningful impetus and direction to researchers. In this sense, communication clearly lags behind certain other areas of organizational phenomena, such as motivation and leadership.

(2) Basic social psychological research pertaining to interpersonal communication and attitude change has provided findings of limited usefulness to anyone concerned with organizational communication. Considerable extrapolation is required if one is to use such findings to analyze communication processes and patterns in organizations.

(3) Laboratory "network" studies of communication seem largely to have run their course, with little really new or exciting evolving from them in recent years. A possible exception, however, would be recent attempts to study networks embedded in other networks.

(4) Research carried out to date on communication in actual organizational settings seems not to have penetrated to the heart of organizational communication problems; that is, such research does not appear to shed very much light on providing effective ways to cope with such problems. However, we remain hopeful that it could do so in the future.

(5) There exists a strong and obvious need for more varied and more innovative methodological approaches to studying communication in organizations, if solid research advances are to be made in this area in the future. Otherwise, there is danger of the area becoming sterile and nonproductive with respect to adding to the literature on organizations.

(6) Finally, we believe that communication represents an under-theorized and under-researched area that offers excellent opportunities for future contributions to the growing body of knowledge about behavior in organizations.

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Footnotes

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[2]A more extensive discussion of a number of points mentioned in the remainder of this section concerning the relationship between organizational theory and organizational communication can be found in "Uncommunication: The Role of Organizational Theory in Conceptualizing Communications in Organizations," mimeograph, Institute of Industrial Relations, University of California, Berkeley.

TABLE 1

Number of Managers For Whom Their Attitude Scores are More Positive For Interactions With Their Superior Than With Their Subordinates[a]

Attitude Scale	Manufacturing company				Social service organizations				Total			
	+[b]	-	0	p	+	-	0	p	+	-	0	p
Valuable-worthless	27	20	8		29	15	6	.05	56	35	14	.05
Satisfying-dissatisfying	28	20	7		29	14	7	.05	57	34	14	.05
Interesting-boring	33	16	6	.05	28	16	6	.10	61	32	12	.01
Precise-vague	29	18	8		21	24	5		50	42	13	
Challenging-non-challenging	31	17	7	.10	27	17	6		58	34	13	.05
Composite for five scales	36	13	6	.01	27	20	3		63	33	9	.01

a. From Lawler, et al., (1968), Table 6, p. 437.

b. Plus sign indicates more favorable response to interactions with superiors. Sign tests were two-tailed.

TABLE 2

Number of Comparisons Showing Differences Between Centralized (Wheel, Chain, Y) And Decentralized (Circle, Comcon) Newtworks As a Function of Task Complexity[a]

	Simple problems[b]	Complex problems[c]	Total
Time			
Centralized faster	14	0	14
Decentralized faster	4	18	22
Messages			
Centralized sent more	0	1	1
Decentralized sent more	18	17	35
Errors			
Centralized made more	0	6	6
Decentralized made more	9	1	10
No difference	1	3	4
Satisfaction			
Centralized higher	1	1	2
Decentralized higher	7	10	17

a. From Shaw (1964), Table I, p. 123.
b. Simple problems: symbol-, letter-, number-, and color-identification tasks.
c. Complex problems: arithmetic, word arrangement, sentence construction, and discussion problems.

TABLE 3

Subgroup Membership and Two-Way Channels Between Members of Subgroups.[a]

Member	Subgroup membership			Member										
	1	2	3	1	2	3	4	5	6	7	8	9	10	11
1	+[b]						=	=	=			=	=	=
2	+	+										=	=	=
3	+	+										=	=	=
4		+		=						=	=	=	=	=
5		+		=						=	=	=	=	=
6		+		=						=	=	=	=	=
7	+		+				=	=	=					
8	+		+				=	=	=					
9			+	=	=	=	=	=	=					
10			+	=	=	=	=	=	=					
11			+	=	=	=	=	=	=					

a. From Cohen, et al., (1969), Table 1, p. 210.
b. + Indicates membership in subgroup.
= Indicates two-way channel between member of one subgroup and all other members of the organization not members of his subgroup.

TABLE 4
Summary of Methodologies Employed in Communication Field Studies

Investigator(s)	Problem(s) Investigated	Type of Organization	No. Organizations Studied 1	2	3+	Data Analysis by Organization or Subject	Mgrs.; Professionals	Workers	Clerical	Misc.	N	Method of Data Collection	Attitudinal or Factual Data Collected	All Data From Same Source?	Hypothesis-Test or Exploratory Research	Results Tested for Statistical
Allen & Cohen (1969)	Influence of the organizational structure upon the communication network. Technological gatekeepers.	R & D Laboratories		X		ORG.	X				58	Sociogram	A&F	Yes	H	Yes
Burns (1954)	How executives spend their time	Large Business	X			-	X				4	Self-recording form	F	Yes	E	No
Davis (1953b)	Grapevine	Manufacturing Company	X			-	X				67	Ecco analysis	F	No	E	No
Davis (1968)	Efficiency of chain-of-command communication	Manufacturing Company	X			-	X				101	Ecco analysis	F	No	E	No
Dubin & Spray (1964)	Executive activities	Savings & Loan Co.; manufacturing firms			X	SUB.	X				8	Self-recording form	F	Yes	E	No
Hage, et al (1971)	Relation of type of mechanism of coordination employed by organization and the volume and direction of communication	Health & welfare organizations			X	N/A[1]	X				N/A	Interviews	F	Yes	H	Yes
Jones, et al (1963)	Status differences in task oriented groups	Naval ROTC Program	X			-				X	79	Self ratings & partner ratings	A	No	E	Yes
Julian (1966)	Compliance patterns and communication blocks	Hospitals			X	ORG.				X	183	Interviews/ Questionnaires	A	Yes	E	No
Kelly (1964)	Executive behavior	Manufacturing Company	X			-	X				4	Activity Sampling	F	Yes	E	No
Landsberger (1961)	Horizontal relations among managers	British engineering plants			X	ORG.	X				N/A	Adaptation of Bales' Interaction Process Analysis	F[2]	Yes	E	No
Lawler, et al (1968)	Managerial attitudes and behavior in communication episodes	Large mfg. plant, social service agencies			X	SUB/ ORG.	X				105	Self recording forms	A&F	No	E	Yes
Maier, et al (1963)	Effect of manager's previous position on superior-subordinate communication	Large industrial firm			X	SUB	X				80	Job ratings (interviews)	A[3]	No	E	Yes
Read (1963)	Motivational and attitudinal factors in upward communication	Large industrial firm			X	SUB	X				104	Interviews	A	No	E	Yes
Simpson (1959)	Effect of mechanization on vertical and horizontal communication	Textile mill	X			-	X				8	Interviews	F	Yes	E	No
Slobin, et al (1968)	Methods of address	Insurance firm	X			-	X		X		87	Interviews	A&F	Yes	E	No
Smith & Brown (1964)	Relative importance of communication structure and control structure	League of women voters			X	ORG[4]				X	Approx. 2847	Questionnaire	A&F	No	H	Yes
Sutton & Porter (1968)	Grapevine	State government office	X			-	X		X		79	Ecco analysis	A&F	No	E	Yes
Tenenbaum (1960)	Manager's attitudes and perceptions of communication episodes	Large utility organization	X			-	X	X	X		90	Self recording form	A&F	No	H	Yes
Triandis (1959)	Relation of cognitive similarity between superiors & subordinates & the effectiveness of interpersonal communications	Medium-sized firm	X			-	X	X	X		155	Questionnaire	A	Yes	H	No
Webber (1970)	Superior and subordinate perceptions of interactions	Railroad and electrical manufacturing firm		X		SUB	X				54	Interviews	A&F	No	E	Yes
Wickesberg (1968)	Characteristics of individual communication networks	Commercial, industrial & educational organizations			X	SUB	X				91	Self recording form	F	Yes	E	Yes
Zajonc & Wolfe (1966)	Relations between a person's position and his cognitions about his company	Industrial firm	X			-	X	X	X		42	Employee descriptions of company	A&F	Yes	E	Yes

Footnotes

1. Data was organized by amount of structure, amount of planning, etc. Results not broken down either by organization or subjects.
2. Includes observed hostility.
3. Perceptions of job duties, requirements, etc.
4. Organizations classified into large, medium and small for analysis.

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